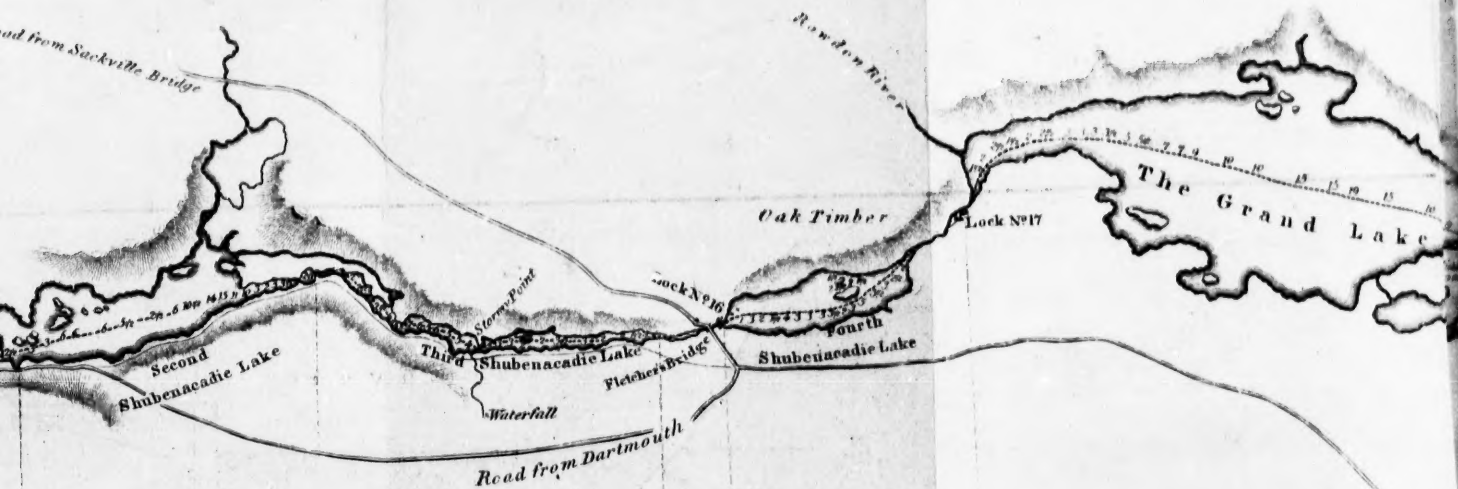


Part 1. Vol. 2



Soundings in Lakes are in Fathoms.

Statute Miles
0
1
 Scale: One Mile to an Inch.

MAP AND SECTION **of Proposed Shubenacadie Canal** **FROM HALIFAX to BASIN of MINES**

by Francis Hall, Civil Engineer,

July 1823.

Engraved by C.W. Dobson Halifax.

Surface 53 feet above High Water.

Surface 57 feet above High Water.

Fletcher's Bridge
 Lock No. 16 18 feet descent
 Waste Weir

Lock No. 17 6 feet 10 in.
 Waste Weir

Surface 42 feet 6 in above High Water Halifax

Lake William or 2nd Shub. L.

Lake Thomas 3rd Shub. L. 9 Feet Backwater

Fletcher's or 4th Shub. L.

The Great Lake

Line of High Water at Halifax

Summit between Lakes 110 feet 3 1/2 inches
 above High Water line

95 feet 6 inches to Present Surface of Lake Charles

58 feet 8 inches

Original Surface

LOCKAGE

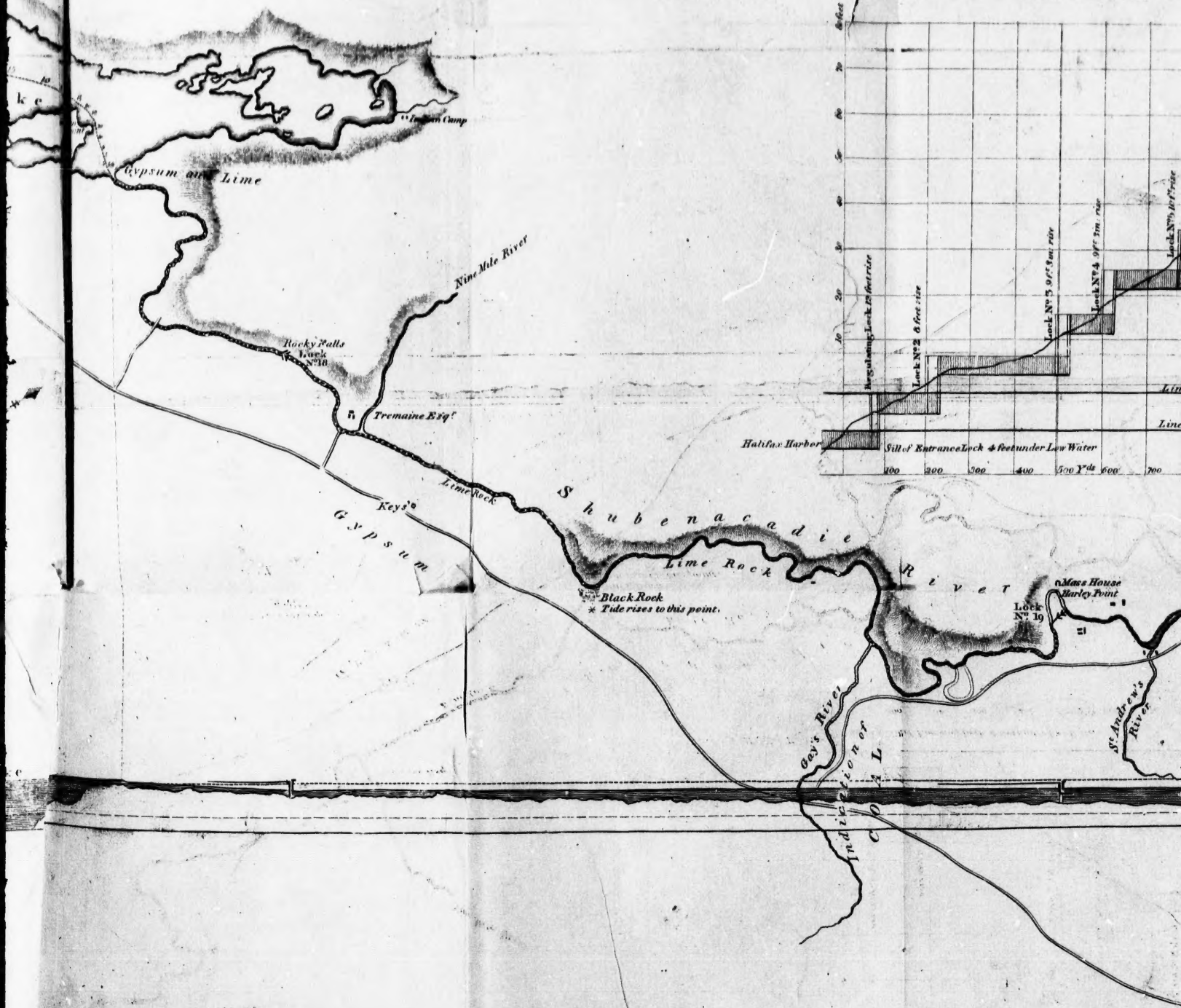
Section No. 2

57 ft.

59 ft.

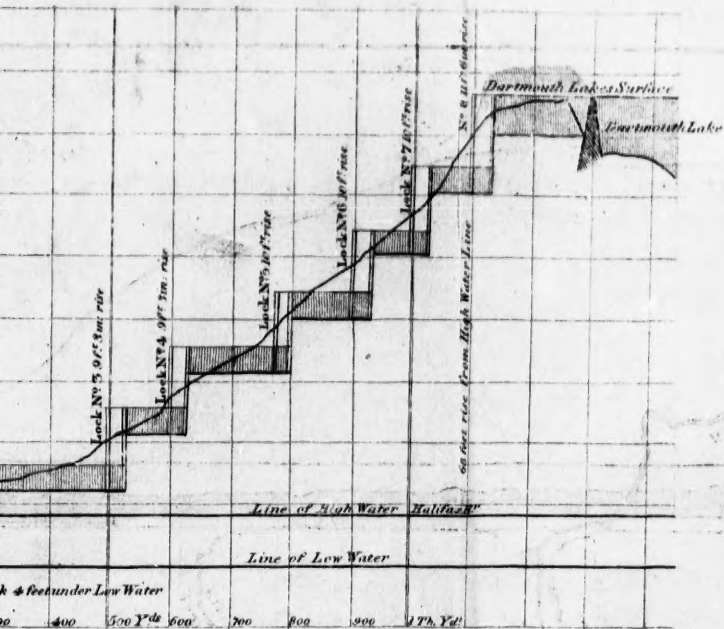
6 ft.

LOCKAGE
Section N



LOCKAGE

Section N^o 1.



Mass House
 Harley Point
 Lock No. 19

St. Andrew's River

Port Ellis

Surface Line of Green Lake

River Stewiack

Stewiack Bridge

Gypsum Rock
 Shubenacadie River

Surface Lake Charles

95 feet 8 inches to present Surface

9th

10th

Basin of Mines

The Tide rises here 50 feet.

London

Onslow

Truro

Onslow

Reverend Dam

Lock N^o 12
10 feet descent

Waste Wear
B

Lock N^o 13
9 feet descent

Lock N^o 14
9 feet descent

Lock N^o 15
9 feet descent

Lock N^o 16
9 feet descent

LOCKAGE
Section N^o 3

95 feet 8 inches to present Surface

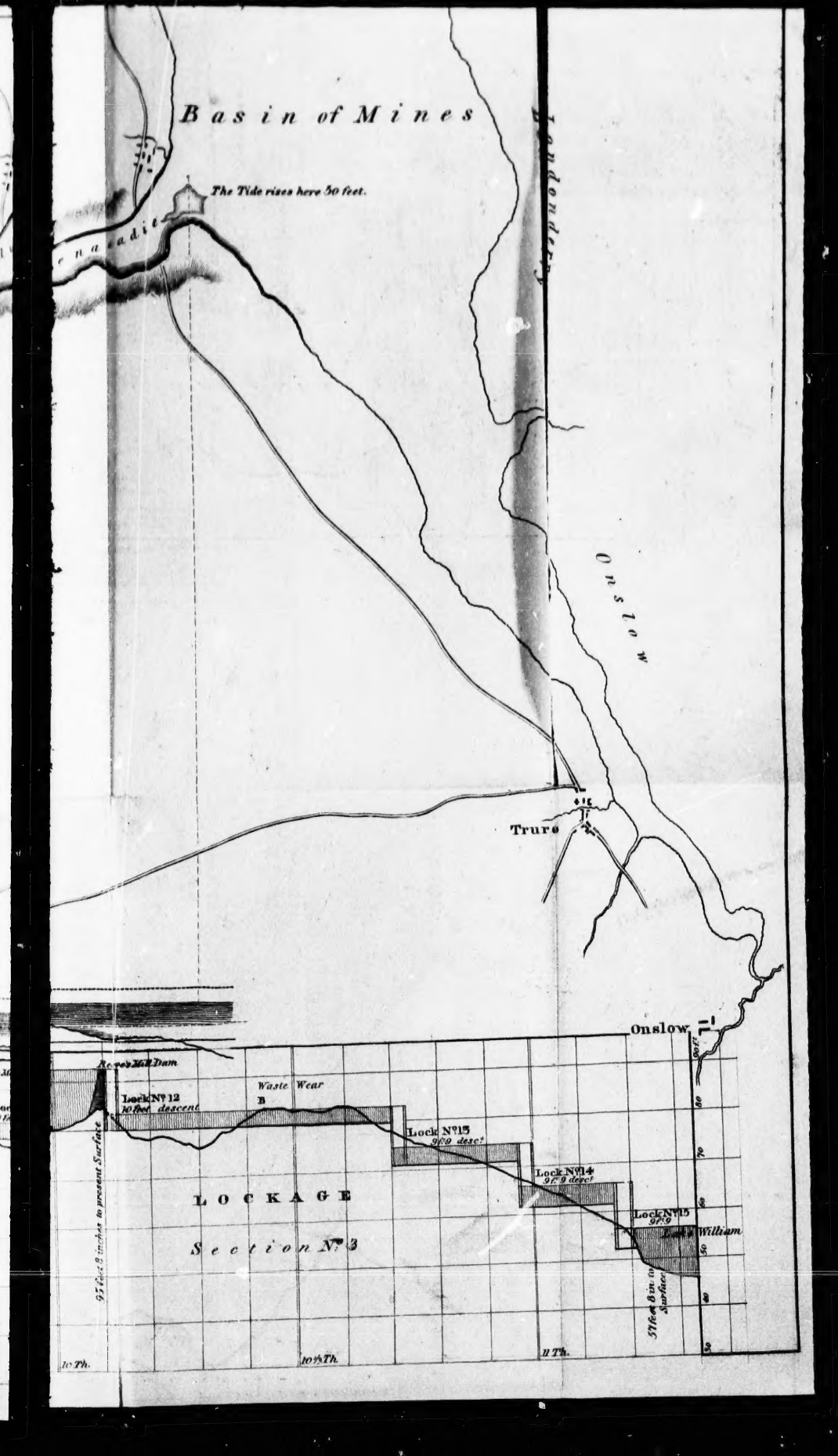
51 feet 8 inches to Surface

10th

10th

11th

12th





PRINT



A NEW MAP OF
NOVA SCOTIA,
 Cape Breton,
Prince Edward Island,
 and part of
NEW BRUNSWICK.
 1825.

PRINTED BY J. S. CUNNABELL, 105, BARRINGTON-STREET.

1826.





A NEW MAP OF
NOVA SCOTIA,
Cape Breton,
Prince Edward Island,
and part of
NEW BRUNSWICK.
1825.

REL

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REMARK

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ST. PETER'S

PRINT

REPORTS AND PAPERS
RELATING TO A CANAL,

Intended to Connect

THE

HARBOUR OF HALIFAX

WITH THE

BASIN OF MINES ;

REMARKS ON ITS NATURE AND IMPORTANCE,

AND A

PLAN AND SECTION.

ALSO,

The Report of a Survey for Canals

BETWEEN

ST. PETER'S BAY AND THE BRAS D'OR LAKE, IN CAPE BRETON ;

AND

The Bay of Fundy and Bay of Verte.

HALIFAX, N. S.

PRINTED BY J. S. CUNNABELL, 105, BARRINGTON-STREET.

1826.

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April 7, 1971

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Halif

TO HIS EXCELLENCY

LIEUT. GEN. SIR JAMES KEMPT, K. G. B.

Lieutenant Governor and Commander in Chief of Nova-Scotia and its
Dependencies, &c. &c.

SIR,

THE PAPERS connected with the SHUBENACCADIE NAVIGATION being now Printed, I have the Honor of submitting them to your EXCELLENCY—accompanied with some NOTICES respecting that useful Measure. For these permit me to solicit your favorable consideration. They are intended to explain its intimate connexion with all the important Interests of the Province;—whose general Prosperity a grateful and happy People recognise as the sole object of your Administration. The attention, you have constantly devoted to the Communications of the Interior, affords full assurance that this Enterprise will receive your support and countenance. For the very imperfect manner, in which its Results are examined, and illustrated in the following Pages, allow me to claim your EXCELLENCY's indulgence.

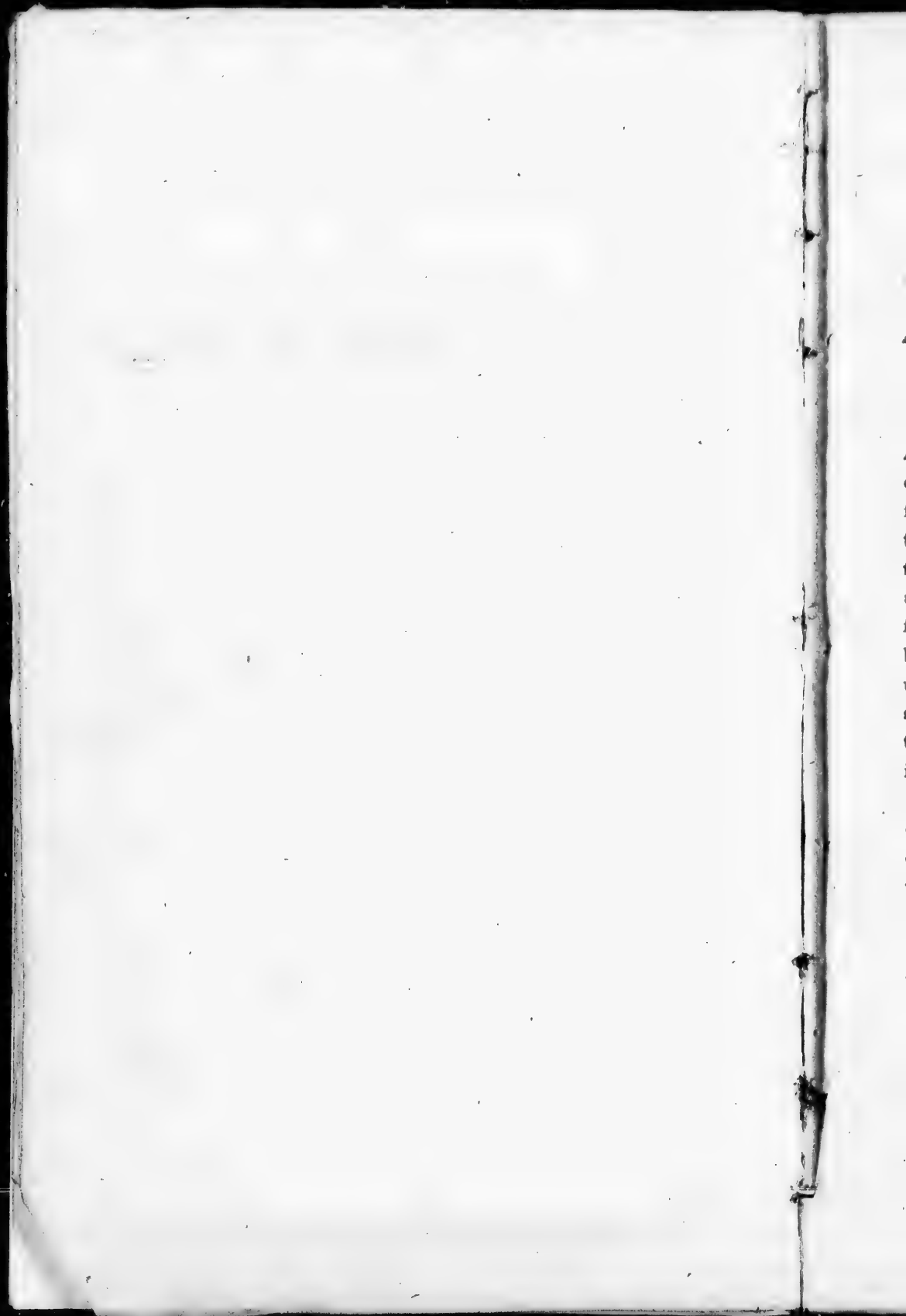
I am with the greatest respect,

Your EXCELLENCY's

Most Obedient and Humble Servant,

CHARLES R. FAIRBANKS.

Halifax, 30th January, 1826.



ANNO QUARTO
GEORGII IV. REGIS.

CAP. 3.

An ACT to authorise the Incorporation of a Company for making a Canal by the River and Lakes of the Shubenaccadie.

(ASSENTED TO 3d MARCH, 1824.)

BE it enacted by the Lieutenant-Governor, Council and Assembly, That whenever a sufficient number of persons shall have associated themselves together, for opening and making a Navigable Cut Canal, or Water Communication, between the Harbour of Halifax and the Bason of Mines, by, along, or near to, the course of the River Shubenaccadie, and the lakes thereof, and shall have agreed to raise sufficient monies to effect the same, it shall and may be lawful for the Governor, Lieutenant-Governor, or Commander in Chief for the time being, at any time within five years from the passing hereof, by Letters Patent, under the Great Seal of this Province, to make, erect, and incorporate, all and singular the persons who, from time to time, shall be adventurers in, or parties to, the said undertaking, and their assigns, into one body politic and corporate, in deed and in name, under the title of—THE SHUBENACCADIE CANAL COMPANY, and, by that name to have succession, to sue and to be sued, to have a common seal, and to possess and enjoy such powers with respect to the choice of a President and other Officers, making bye laws, and regulating the affairs of the said Company, as shall be expressed in the same Letters Patent.

II. And be it further enacted, That the said Company, when so Incorporated, shall, and they are hereby declared and made capable in Law, to have, hold, purchase, receive, possess, enjoy, and retain, lands, rents, and tenements, to the amount of Fifty Thousand Pounds, and no more at one time ; and also, monies, goods, chattels and effects, to the amount of Twenty-five Thousand Pounds, and no more, at any one time ; and also, to sell, grant, demise, alien, or otherwise dispose of, such lands, tenements, rents, monies, goods, chattels, and effects, at their free will and pleasure.

III. And be it further enacted, That in such Letters Patent, the necessary officers of such Corporation, shall be named and designated ; and proper

persons appointed to be such officers for the first year; and that the said Corporation may make, establish, and put in execution, such laws and regulations as may be necessary for making such Canal and the works thereof, levying the assessments, and for the government of the said Corporation, *provided*, the same shall in no case be repugnant to the Laws of this Province.

IV. *And be it further enacted*, That the Capital or Joint Stock of the said Corporation, shall be divided into such, and so many, shares or portions, as the said Corporation, by their bye laws or ordinances, shall from time to time appoint: and such shares shall be transferable; and be conveyed in such manner, and under such restrictions and conditions, as in such bye laws shall be appointed.

V. *And be it further enacted*, That it shall and may be lawful for the said Company, when so incorporated, to make, open, and cut, a sufficient Canal or water communication of such breadth, depth and dimensions, as shall be deemed fit and necessary, from the waters of the Harbour of Halifax, through the Dartmouth Lake so called, the lakes and channels or course of the River Shubenacadie, or by, or along, the sides or banks of such lakes and river, to such part of the River Shubenacadie between its place of discharge into the Bason of Mines, and the Great Lake, as shall be found practicable, or most convenient or proper for making a continued navigable Channel or Canal for the passage of boats or vessels, to and from the Bason of Mines, and the Harbour of Halifax, respectively; and also, to dig and excavate such lock pits, chambers or basons; and to make, build and erect, such locks, sluices, dams, weirs, and embankments, in, over, across or upon, the course of the said river, or along the sides thereof, or at or near to the several lakes or streams connected therewith, as shall be considered necessary or proper for effecting such inland water communication; and at all such places or parts of the said river, lakes or streams, and in such lines, courses and directions, from one part to another of the said river, lakes and streams, as the said Company shall deem expedient; and further, to make, place and erect, such and so many lock gates or doors, as shall be necessary in the line, course or direction, of such Canal, or required in the locks, dams or sluices thereof; and likewise to dig, excavate and deepen, the channels and courses of the said river, lakes and streams, whenever necessary, whether at the places of junction of the said lakes, river and streams, respectively, or elsewhere in the course, channel or basons thereof; and moreover to divert, turn, change or alter, the course, channel and direction, of the river lakes or streams, aforesaid, wherever necessary; and to make, dig and excavate, a channel, or course for the said river, or the waters thereof, and to form the said Canal in any other manner, or different direction, between the said lakes respectively, or between any one or more of the said lakes, and the said

river, or any particular part thereof, than the course or direction which the waters of the said river or outlets of the said lakes do now run in or follow—and furthermore to retain, dam up and confine, the waters of the river, lakes, and streams aforesaid, in the natural basons, courses, or reservoirs thereof, or in any other artificial basons or reservoirs, to be made by the said Corporation, and to lessen or reduce the actual surface, waters, or depths of such lakes, river, or streams, whenever necessary or proper, for the purposes of the said Canal or water communication—and generally to use and appropriate the waters of the said river, lakes, and streams, and the channels and water courses thereof, to and for the use and benefit of, and for rendering effectual, navigable and useful, the said intended Canal or water communication from Halifax aforesaid, to the said Bason of Mines.

VI. *And be it further enacted*, That the said Company shall have power and authority to make, open and complete, in all such places where the same shall be thought necessary, in or upon the said Canal, river and lakes, and the shores or banks thereof respectively, such towing paths, walks or roads, as shall be found necessary or useful for the tracking or towing along the line of such Canal, river or lakes, the boats, barges or vessels, to be used or employed thereupon; and such towing-paths, walks or roads, with all necessary appendages thereof, from time to time, to repair, amend, alter or sustain, as the said Corporation shall see fit.

VII. *And be it further enacted*, That it shall and may be lawful for the Governor, Lieutenant-Governor, or Commander in Chief for the time being, by whom such Letters Patent of Incorporation shall be granted, to give and convey thereby to the said Company all such other powers, privileges, authorities and immunities, in regard to the making, executing, repairing and sustaining, such Canal or water communication, as are commonly and usually granted to such Canal Companies; and as shall appear to him, with the advice and consent of his Majesty's Council, to be reasonable, fit and proper, in this behalf; and further, by and with the consent aforesaid, to impose such restrictions and conditions on the said Company as may be proper or expedient in regard to the size and dimensions of the said Canal, and the locks and works thereof, the rates or tolls to be taken, or other subjects connected with such Canal.

VIII. *And be it further enacted*, That the course and channel of such Canal or water communication—and the dams, wears, embankments, sluices, locks, lockpits or chambers, lockgates, reservoirs and basons, by the said Corporation to be erected and made, as aforesaid—and the waters and streams of

the said river and lakes, so far as the same are or may be required or necessary to be used, retained, directed or appropriated, to and for the use and benefit of such Canal, and the beneficial enjoyment thereof; and all lands or real estate, purchased or obtained for such Canal, and through which it shall be made, and the towing or tracking paths or roads aforesaid, along the said Canal, river and lakes—shall be, and they are hereby, vested in, and declared and made the sole exclusive property of the Company, for and during the term of Ninety-nine years from the date of such Letters Patent.

IX. *Provided always, and be it further enacted*, That a way and passage in, through and along the said Canal or water communication, and the locks, gates and passages thereof—and in and upon the towing-path, roads or side-paths, of the said Canal, or by the said Company to be constructed or made for the use and benefit of the said Canal, shall be, at all convenient times and seasons, free and open to all his Majesty's subjects, with their boats, vessels and goods, and horses or cattle, towing or drawing the same, after payment or tender of the toll or pass-money, which shall be established and ordained by the said Corporation, upon and for the several parts of the said communication.

X. *And be it further enacted*, That the several rates, tolls and pass-mones, hereinafter to be ordained or established by the said Company upon the line of the said Canal, shall be subject and liable to the regulation of his Majesty's Council, in the manner to be directed by the said Letters Patent.

XI. *And be it further enacted*, That wheresoever the course, line or direction, of such Canal or water communication, shall be crossed by any public highway now or hereafter to be established under the provisions of the present or any future Laws of this Province, the said Corporation shall be and is hereby required and made, subject and liable to build and erect, at the proper costs and charges of such Corporation, such sufficient and substantial bridges or draw-bridges as shall be necessary for the convenient use of the said highways where they cross such Canal; and such bridges or draw-bridges respectively, shall, from time to time, be kept in repair and sustained by the said Corporation; and be free and open to all his Majesty's subjects at all times and seasons.

XII. *And be it further enacted*, That wheresoever the line of such Canal or communication shall be crossed, or intersected by any private way; or shall pass through land owned by any one of his Majesty's subjects on both sides of the said Canal; or whenever, in future, any private way shall be required to be made across such Canal; then, and in every such case, the right of privilege of erecting and sustaining a bridge, or other mode of crossing such Canal

for the use of the party entitled or requiring such private way or passage, and the proceedings for obtaining such right or privilege, shall be obtained, regulated and be pursued, in such and the like manner, and under such and the like conditions as private ways may now, or shall, by any future Laws of this Province, be procured, regulated or established.

XIII. *And be it further enacted*, That whenever, for the course, channel or scite of such Canal, or the works thereof, or for cutting or opening such Canal, or for making or erecting any of the locks, dams, reservoirs or embankments thereof, or for any of the other purposes mentioned and authorised by this Act, the said Corporation, their engineers or servants, shall consider or find it necessary that any lands, lying or being in the course or direction of such Canal, or water communication, or contiguous thereto, or upon the shores or banks of the said river, lakes or streams, should be purchased by, or vested in, the said Corporation, to enable them to make and complete, and beneficially use, the said Canal; then, and in every such case, it shall and may be lawful for the said Corporation to have, use, adopt and take, such and the like course and proceedings in regard to such lands, and the obtaining the same, for the use of the said Corporation, as by any present or future Law of this Province, are or shall be enacted, or in force, touching the making or altering any public highway through the lands of any private person in this Province; and such and the like process and course of proceedings, as are or may be requisite for divesting the right and interest of the individual owner of the land required for a public highway, and appropriating such land for the use of the public, shall and may be used, pursued and taken, for divesting the estate and interest of the respective proprietors of the lands required for the use of the said Corporation, and vesting such lands, with their appurtenances, in the said Corporation. And in every such case, after such and the like proceedings had as may be taken with respect to highways—and after the verdict of a jury taken and confirmed—and the damages assessed in favour of the proprietor, paid and satisfied—and all other the provisions and requisites in force as respects highways, in all particulars observed and confirmed—the said lands and tenements described in, and forming the subject matter of, such proceedings, shall be, and they are hereby, with their respective appurtenances, vested in, and appropriated to, the use of the said Corporation, and shall be and remain to, and be enjoyed by, the said Corporation in fee simple.

XIV. *And be it further enacted*, That whenever, in the making or opening such Canal, and performing the works thereof, it shall be necessary for the said Company or their servants to procure materials for the said works from

any uncultivated lands lying on or contiguous to the said Canal, river or lakes ; and the owner of such uncultivated land, shall be absent ; or no agreement can be made with him ; then and in every such case, it shall and may be lawful for the said Company, and their servants, to enter with workmen, carts, carriages and cattle, upon such uncultivated lands, and, thereon and therefrom, to dig up, take and carry away, stones, earth and gravel, and to cut down, and carry away therefrom, trees and brushwood, logs, poles and bushes, for the works of such Canal ; and the damage thereby done, shall be appraised and ascertained by the judgment of three indifferent freeholders, to be nominated by the nearest Justice of the Peace, for that purpose ; and the sum so ascertained, shall be paid or tendered by the Company to the owner of the soil, if demanded within three months from such appraisement.

XV. *Provided always, and be it further enacted*, That no damage be done to any particular person in his land or property, nor the course of any river or stream, or waters whatsoever, be turned or diverted without due recompense to be made by the said Corporation as the said Corporation and the parties interested may agree ; or as shall be ordered by the Justices in general or quarter sessions, upon enquiry into the same, by a jury to be summoned for that purpose.

XVI. *Provided always, and be it further enacted*, That if any dam, wear or embankment, shall be made across the present course or channel of the River Shubenacadie, below the Great Lake, so called, the said Corporation shall make and maintain therein a sufficient waste gate, opening or passage, for allowing fish to pass up and down the said river : and with respect to such waste gate, opening or passage, shall be subject and liable to the rules, orders, regulations and penalties, from time to time made, or to be made, by the General Sessions of the Peace, in respect to the preservation of the River fishery, under the Acts now or hereafter to be in force thereupon.

XVII. *And be it further enacted*, That nothing herein contained, shall extend, or be construed to extend, to pledge the Government of this Province to have any concern, share, or interest in the proposed Canal or water communication ; or to give the said Corporation, or any of the persons composing the same, any claim of any sort or kind upon the Treasury or Government of this Province, for any monies or pecuniary aid : it being the true intent and meaning of this Act, that those who may engage therein should proceed upon their own responsibility, and opinion of the advantages and practicability thereof.

XVIII. *And be it further enacted*, That, unless the said Corporation, within the space of ten years from the passing of this Act, shall have made such pro-

gress towards the completing of the said navigation, as shall satisfy the Governor, Lieutenant-Governor, or Commander in Chief, and his Majesty's Council, that there is a reasonable prospect that such Corporation will, within a limited period, be able to complete the said navigable Canal, then and in such case this Act, and every matter and thing herein contained, shall cease, and be no longer in force.

ESTIMATE

OF THE EXPENSE, &c. OF AN INLAND NAVIGATION FROM DARTMOUTH TO THE BASON OF MINES.

(NOVEMBER, 15, 1797.)

To the Honourable the Commissioners appointed to examine into the practicability and expense of opening an inland navigable Communication, between the Harbour of Halifax and the Bason of Mines.

GENTLEMEN,

Having, by your request, surveyed and taken the Levels from Halifax Harbour to the tide-water, flowing from the Bason of Mines up the Shubenaccadie River, we beg leave to report as follows :—

Beginning at Dartmouth at highwater mark, and proceeding up Dartmouth Mill Brook to the Dartmouth Lake, the perpendicular ascent is	FT. IN.
Then crossing the Dartmouth Lake to the carrying place, at 51 chains, the highest perpendicular ascent,	64 2
	46 34

The highest ground above highwater mark,	110 54
From thence 104 chains to the first Shubenaccadie lake, the perpendicular descent is	20 94

Height of the first Shebenaccadie lake above highwater at Dartmouth,	FT. IN.
Passing the first Shubenaccadie lake the descent to the second is	89 9
From the second Shubenaccadie lake to the third,	31 114
From the third to the fourth, (below M ^r Nabb's Bridge,)	1 0
From the fourth to the Great Lake,	9 04
Long Falls below the Great Lake,	6 44
Middle Falls,	5 6
Falls next above Nine Mile Brook,	1 6
Falls below Nine Mile Brook,	3 6
Do. half a mile lower,	2 1
	0 4

Total descent from the first Shubenaccadie Lake to the bottom of the Rapids,	61 34
--	-------

Total rise and descent,	150 114
-----------------------------------	---------

From thence proceeding down the Shubenaccadie River with a gentle current (estimating the descent at 8 inches per mile) to James Ellis's (about 3 miles above Fort Ellis,) found at low water about 12 inches water over the Flats. And here from the general information of the best informed inhabitants, middling tides rise from four to five feet. From which we infer that the only impediment to a four feet navigation, from this place up to the Falls below Nine Mile Brook, consists in the trees which have drifted and lodged in the River.

From the lower end of the Falls below Nine Mile Brook, the navigation is proposed to be continued in the following manner :—viz.

From the lower end of the falls below Nine Mile Brook, into the upper Shubenaccadie Lake,

9 Locks, at £818,	£6544	0	0
4 Rubble Dams, at £130,	520	0	0
4 do. at £152,	608	0	0
Digging the Canals and Lock pits for 8 Locks, 43,304 cubic yards, at 7d.	1263	0	8

£8935 0 8

From the upper Shubenaccadie Lake through the portage to the Dartmouth Lake, length 61½ chains.

Digging the first 33 chains through the highest ground, 40,011 yards, at 9d.	1500	8	3
Digging 28½ chains to the Dartmouth Lake, including 3 lock pits, 19,369 yards, at 7d.	564	18	7
3 Locks,	2454	0	0

4519 6 10

£13,454 7 6

From the Dartmouth Lake down the Mill Brook to 6 feet below highwater mark.

9 Locks,	£7362	0	0
Digging the Canals and Lockpits for 9 Locks 36,360 yards at 7d.	1060	10	0
5 Rubble Dams,	650	0	0

9072 10 0

Pumps, Boats, Tackles, &c.

350 0 0

Allowance for incidents,

1126 0 0

*£24,002 17 6

The particular situation of the above works will appear by the plan herewith connected. The locks to be faced with Ashlar stone, set in Terras mortar and backed with Rubble in good common mortar, and are calculated to chamber a vessel of 60 feet keel and 15 feet beam, drawing 4 feet water.

*Add one third for unforeseen obstructions, accidents, and the probable rise of wages, &c. &c. £9000 :—makes £32,002 17 6.

The bed of the Mill Brook, and the ground adjoining, is covered with loose stones applicable for making the dams and inner parts of the lock walls ; and under these strong gravel may be expected.

The track of the proposed Canal, through the portage, answers the same description, except that a few of the stones may require blowing.

The same description agrees with the Shubenaccadie River down to the lake below M^cNabb's Bridge : but, below that, the channel becomes less rocky, and, at the last falls below Nine Mile Brook, the bed of the river is gravel and the banks loam.

ISAAC HILDRITH.

Halifax, November 15, 1797.

Note.—The annexed estimate has been founded on the present price of day labour, and masons and *carpenters wages ; and on the presumption that all the stone for the locks as well as the timber, may be found on the spot ; or at a small expense for cartage.

M. W.

* Labourers, 2s. 6d. per day—Masons, 5s. and 5s. 6d.—Carpenters, 4s. 6d. and 5s.

LETTER

Addressed by his Excellency Sir John Wentworth,

Late Governor of the Province ;

To the Gentlemen who, upon the Report made by Messrs. Hildrith and Chamberlain, proposed to form a Company for making the Canal.

Halifax, Nova-Scotia, 16th July, 1798.

GENTLEMEN,

The House of Assembly, in their late Session, had under consideration a petition of William Forsyth, Andrew Belcher and Richard Kidston, Esquires, praying for Legislative assistance, to erect a Canal navigation from this Harbour, at Dartmouth, to the navigable water in the River Shubenaccadie ; and thereupon resolved to address me, requesting a patent might be issued toward carrying into effect the purposes intended in the said petition. Being at all times desirous to promote the views of the House of Assembly, for the good of the Province, I shall give the necessary orders to expedite such patent, for the advice and consent of his Majesty's Council. For the better completing

whereof, and effecting the good ends proposed, I shall name in the patent eight Directors, and one Secretary and Cashier :—viz.

WILLIAM FORSYTH, Esq. Chairman,	} <i>Directors.</i>
ANDREW BELCHER, Esq. Dep'y Chairman,	
WILLIAM COCHRAN, Esq.	
LAWRENCE HARTSHORNE, Esq.	
CHARLES HILL, Esq.	
RICHARD KIDSTON, Esq.	
JOHN BREMNER, Esq.	
—— SABATIER, Esq. and	
MICHAEL WALLACE, Esq. Secretary and Cashier.	

The Chairman or Deputy Chairman presiding, to have a casting vote, in case of an equality of votes, upon any measure.

I am now to recommend that you would convene to consider and report to me, such terms and conditions as you may think expedient to be granted in the patent, that the best measures may be adopted.

I am persuaded that the greatest benefits will be derived from carrying the plan into execution. To the Revenue and morals of the country, by making it the interest and convenience of numerous and increasing inhabitants to purchase of the fair trader, in, or through Halifax ; whence the frauds—lying—violences—and perjuries attendant on illicit commerce—will naturally vanish.

To the commerce of the Province, by facilitating—rendering safe—and reducing the expense of all commodities and produce, upon that extensive fertile and productive country to which such a Canal, as is proposed, immediately communicates. Fuel and provisions, now too dear, would be plentifully supplied at half the present prices ; and with better profit to those who sell. Timber for all the purposes of building—for public use, and for exportation—Hay, and other bulky articles, now immensely dear from its freight from counties, that have less to spare than those which would employ the proposed navigation, may then be plenty and at a moderate price in our markets. In fine, the benefits are so many—so obvious and so great, that I think they demand the best exertions, and will greatly reward the zeal of every friend to the Province. Upon such principles, my best services shall be faithfully applied. As the most prominent proof whereof, I request you, Gentlemen, to commence the trust. In your wisdom, public spirit, experience, and perseverance, confiding such fair hopes of success, as precludes all apprehensions of disappointment or failure.

I have the honour to be, with great esteem and respect,
Gentlemen, your Obedient Servant,

J. WENTWORTH.

MINUTES OF A SURVEY

MADE OF THE INTENDED CANAL, FROM FLETCHER'S BRIDGE ON THE SHUBENACCADIE RIVER, THROUGH LAKES THOMAS, WILLIAM AND CHARLES, THENCE BY THE DARTMOUTH LAKES, AND MR. HARTSHORNE'S MILL STREAM, INTO THE HARBOUR AT HALIFAX.

I have carefully inspected and surveyed every probable site by which a Canal or conveyance by water could be effected, from Fletcher's Bridge on the Shubenaccadie River, to Bedford Basin, or the Harbour of Halifax; and am decidedly of opinion the latter track or site above-mentioned, has much the advantage.

Having commenced my survey at Fletcher's Bridge, I measured the elevation of the mill dam at said place, which was eight feet above the surface of the stream at the bottom; I then proceeded up the River, (the passage of which in some parts is much impeded, with stones, &c.) but found the dam when filled to the elevation of eight feet, would render it commodious beyond every difficulty that presents itself. Thence through Lake Thomas, spacious and navigable, to a Pass from Lake William; which Pass is forty perches long and one wide in its narrowest parts, with a bottom somewhat stoney, and of small elevation. On inspection I found the water, when raised eight feet at Fletcher's mill dam, would reach this pass, and render it also navigable beyond all its apparent difficulties. Thence through Lake William, a beautiful and navigable sheet of water, to its source—a strong stream from Lake Charles. Here by inspection I found the elevation, at Fletcher's Bridge, had reached to, and ascended the stream for some distance. So that the small elevation of eight feet at Fletcher's Bridge, renders a distance of six miles and a quarter perfectly navigable.

The Pass from Lake Charles into Lake William, I have not yet surveyed. It is now opening for that purpose; but I have carefully inspected it, and find it of easy ascent; it in no part exceeds an elevation of twelve degrees, and has the advantage of many ponds of still water. Its distance into Lake Charles is about one mile, and in all respects fully practicable; the stream affording sufficient water for its navigation.

Thence continued the survey of Lake Charles, extensive and beautiful, fully navigable for two miles to its greatest extremity. This lake is filled in great part from Lake Loon, a large lake situated on the Preston road; its waters and consequently those of Lake Charles might be vastly increased from lakes and streams adjacent.

Thence over land, by a rough but practicable way of not quite three quarters of a mile, into the Dartmouth Lakes. The level of this Pass I have not yet surveyed, but it is now open for that purpose. It no where exceeds an angle of ten degrees. The tinkling stream under the loose stones, as also its easy ascent and descent, shew it was once the Pass from Lake Charles into the Dartmouth Lakes.

Thence through the Dartmouth Lakes, a distance of nearly two miles fully navigable : and so by Mr. Hartshorne's Mill stream into the Harbour at Halifax. This last Pass is also fully practicable, and is amply supplied with water for that purpose.

Thus on minute inspection of the above-mentioned Line, I feel correct in stating it as by far the best track or site, by which a Canal may be conducted. Nature having done every thing which reason could expect, considering the nature of the country, by its copious chain of lakes, opening and branching into innumerable parts of the country, affording an easy, quick, and cheap communication with the Capital, leaving only the short space of not quite three miles, for Art to accomplish a work of such great utility.

Should it be deemed expedient, I would humbly propose a road or land carriage in the three above-mentioned Passes, which could be accomplished this summer. The Passes are for the most part level ; and by the assistance of well conducted road, carriages of great burden could be made over them. So that in one year boats of ten or twelve tons, might ply from the Bay of Fundy, to the Harbour at Halifax ; and this useful and extensive navigation be opened at a small expense. I am the more induced to propose this mode, as a canal could not be effected without it ; and the Toll paid on the articles conveyed would in a short time defray the expenses ; and be of great utility to this new and rising country. Much more remains to be said on the advantages arising from this plan, but I think those mentioned quite sufficient.

VALENTINE GILL.

Halifax 18th March, 1815.

Letter addressed by the Honourable Michael Wallace, to the Chairman of the Committee of the House of Assembly, appointed to consider the subject of the Shubenacadie Navigation.

Saturday, 19th February, 1820.

SIR,

In conformity to the resolutions of the House of Assembly, which you inclosed me, I am to acquaint you : that in the year 1796, the sum of £250 was granted by the Legislature to explore the Dartmouth lakes, and the Shubenaccadie Lakes and Riverdown to Fort Ellis ; with the view to ascertain the practicability of effecting an inland navigation from the Bason of Mines to the Harbour of Halifax. A survey was accordingly made, under my direction in the year 1797, by Mr. Isaac Hildrith an experienced practical Engineer in the business of Canal making, assisted by Mr. Theophilus Chamberlain Deputy Surveyor of Lands. Their plan and Reports are now before you ; and the expense incurred in this service appears to be £208 : 13 : 1. The Estimate made by Mr. Hildrith of the probable expense of executing the work agreeable to his plan, I can have no doubt was as correctly made as human judgment was capable of ; he, being a sober, clearheaded, thinking man, was well able and quite disposed, to make his calculations with great caution ; knowing the nature of the ground and the ordinary difficulties to be expected.

His survey and estimate were submitted to the Navy Board by the late Commissioner Duncan ; and the subject was so well thought of by that Board, that it was their intention, had the war not broke out shortly after it was considered, to have sent out a Naval Engineer to examine, and confirm or correct Mr. Hildrith's report and estimate ;

The sums of money granted in 1814 and 1815, at the solicitation of Mr. Sabattier, were expended under his direction by a Mr. Gill ; the result of which threw no additional, nor indeed any light on the subject, and served only to corroborate the report of Mr. Hildrith's course, and the correctness of the levels he had taken. Gill proceeded however no farther than M^cNabb's or Fletcher's Bridge, and made no calculations of expense ; and I never saw or heard of any report* of his proceedings, other than the sketches of the Dartmouth and part of the Shubenaccadie Lakes.

*No formal Report was made by Gill ; but his Minutes of the survey were returned to the office of the Surveyor General with a plan and section of the course from Halifax to Fletcher's Bridge ; these vary but little from Mr. Hall's survey.

With regard to the measures the Assembly may think advisable to adopt, in consequence of his Excellency's recommendation on this subject, I can only say, that since the time of Mr. Hildrith's survey and estimate, (now upwards of twenty years,) there may be new and improved ideas on canal works and navigation; and considering the inland navigation contemplated, to be of vital importance to Nova Scotia, it is extremely desirable to procure an able practical canal Engineer of the present times, to examine anew those lakes and the course proposed for accomplishing a water communication, as well as an Estimate of the expense—before either the public or individuals embark in an undertaking of such comparative magnitude to our means in this young Country.

According to my judgment, if a competent scientific person should now be found in the United States, he might be induced to come here and do the service required for £500, paying his passage to and from hence. If recourse must be had to England or Scotland for such a person, I do not think a less sum than £1000 would be required to be placed at the disposal of his Excellency the Lieutenant Governor for that purpose.

I am respectfully, Sir,

Your Obedient Servant,

(Signed)

MICHAEL WALLACE.

**Letter from William Chapman Esquire, Civil Engineer,
Newcastle, England, on the subject of the Canal.**

Rye, September 16, 1824.

DEAR SIR,

In carefully perusing the Documents* you left with me, and your description of the probable commerce and the transit of vessels, I have no doubt that the completion of the design would amply remunerate the Subscribers, if the cost were even double of what has been estimated.

I think the Act of Assembly judiciously drawn.

Although the date I already possess have enabled me to speak decidedly—because I know of no existing communication between two seas (except the

*The Documents referred to were the Report and Estimate made by Mr. Hildrith—the plan accompanying it; and the Plan and Section from the Harbour of Halifax to the Dartmouth Lakes—with the Act for Incorporating a Canal Company.

Canal of Sleswick across the Peninsula of Jutland) that possesses such facilities, as exist between Halifax and the Bay of Mines—there yet remains several minute particulars requisite to be acquired; which can best be obtained by some young man of such professional experience as would enable him fully to comprehend and execute such instructions as would be given him by some one of matured knowledge; who also, by having these investigations laid before him, would be enabled to lay down the most advisable modes of proceeding.

I remain, Dear Sir, your Obedient Servant,

WILLIAM CHAPMAN.

Letter addressed to the Honourable the President of the Province, by Francis Hall, Esquire, the Civil Engineer appointed under the authority of the General Assembly, to make a Survey of the Shubenaccadie, and Estimate of the Expense of a Canal.

Halifax, 19th June, 1825.

SIR,

Having carefully surveyed the Dartmouth and Shubenaccadie Lakes and the River down to its confluence, with as much accuracy as appeared to be necessary for the purpose of a Canal communication from the Harbour of Halifax, to the Bason of Mines—

I have now the honor to lay before you, the result of my investigations; viz, a Section and Elevation No. 1 of the Lockage, and connection of these waters; also Designs No 2 and 3 containing a detail of the various works; with minute Specifications for the execution of the same.*

Also a Report and estimate of the expense which I deem sufficient to complete that Navigation.

I feel confident, as to the practicability of the undertaking; and with fewer difficulties than I have seen or experienced in Canal works, either in Britain, Canada, or the United States.

*These being both minute in all the details, and voluminous, and relating solely to the operative parts of the subject, it has not been thought necessary to publish them.

Under this impression, I have no doubt Contractors may be found to execute the work, for the sums stated in my estimate.

I have no hesitation, in desiring it to be understood, That—in the event of public offers being found beyond the sums stated in the estimate— I, upon my own responsibility, will guarantee, to find respectable Contractors, to finish all the work, within eighteen months from the contract date : and, that the sum of Five Thousand Pounds shall be placed at the disposal of the Commissioners, until such time, as the work has been in every respect completed, and open for Navigation during a period of eighteen months.

I have the Honor to be, &c.

FRANCIS HALL.

Report and Estimate by Mr. Hall,

ON THE SHUBENACCADIE NAVIGATION.

In compliance with instructions, from his Honor the President administering the Government of Nova-Scotia, I have examined the Shubenaccadie Canal Route, commencing at a small sheltered Bay, situated 300 yards east of Dartmouth Mill Cove.

The ground, and depth of water is there favourable, for the construction of a regulating Tide Lock ; also, for the excavation of a Timber and Canal Bason. From thence, the Canal line will proceed upon an easy inclination to the surface of Dartmouth Lake, by eight Locks, varying from 8 to 12 feet in general rise.

The lengths, heights and lockage, are marked upon the section No. 1, to which I beg leave to refer.

Passing Dartmouth Lake, one mile and 1340 yards, the soundings average 21 feet. At the northern extremity of the *Narrows*, the depth is 10 feet, decreasing in a distance of two hundred yards, to 6, 7, and 8 feet. The bottom of that *shoal*, is composed of large detached stones, which can be removed at little expense, during the construction of Lock No. 8. Then the water of this lake will be depressed 8 feet 6 inches.

Lock No. 9 is situated at the southern extremity of the dividing ridge be-

tween Dartmouth Lake, and Lake Charles or first Shubenaccadie. For passing this summit three Locks will be required; and deep cutting for 800 yards. The apex of this cut is 16 feet above Top Bank.

To diminish the expense of this part of the work, it is proposed to execute the same, by retaining walls, ten feet in height, and otherwise in accordance with the particular design and specification marked No. 2.

The surface of this ridge is generally composed of large loose stones, well adapted for retaining walls, and rubble backing; the subsoil appears to be of a mixed clay and gravelly nature.

Proceeding upon the Summit level two miles and 880 yards, the depth of water increases in Lake Charles from 36 to 42, 50, 80 and 108 feet, diminishing to 6 feet at the point marked A. The bottom of this shoal is soft: the obstructions are produced by decayed timber, and may be removed without difficulty.

Continuing upon still water to Reeve's mill head, where the present surface of this summit will be preserved by the insertion of Lock No. 10; from the chamber of this lock, pass for three hundred yards upon still water, to the head of a rapid, B. favourably situated for a waste wear.

The Canal line will then deviate from the stream, and be carried upon its right bank for a distance of 800 yards, to Lock No. 15, or head of the second Shubenaccadie Lake.

This lake is 4 miles and 320 yards in extent, the depth of water varying from 17½ to 36, 48 and 60 feet. No interruption will be experienced until passing the narrows or entrance of the Third Shubenaccadie. At the points marked c. c. c. by deepening two feet, a clear navigation will be formed, of 3 miles and 420 yards, to Lock No. 16, at Fletcher's Bridge. At this bridge a waste wear may be conveniently placed.

The Fourth Shubenaccadie Lake is one mile and 1540 yards in length, is of sufficient depth, and only requires the insertion of Lock No. 17, (at the rapid D.) to back water to the preceding lock chamber. Descending by Lock No. 17, we gain the surface of the Grand Lake, situated 41 feet 3 inches above high water in Halifax Harbour. Continuing five miles and 1320 yards the depth of water increases from 14 to 35, 90, and 114 feet, again diminishing to four feet, at the head of the Shubenaccadie River.

The general descent from the Grand Lake by the Shubenaccadie to the Tide way at Black Rock, is twelve feet eleven inches. To produce still water, and of sufficient depth Two Locks will be required for this distance; one

Lock No. 18, at the rocky rapid ; another Lock No. 19, at Harley's point ; this last to act as a regulating Tide Lock.

By the construction of No. 19 Lock at the point proposed, a greater extent of still water will be obtained upon the superior level ; the duration of the tides will also be increased ; thereby presenting a greater facility of making the Bason of Mines within a given time.

Many windings of the Shubenaccadie River may be improved at a moderate rate. The ground gained from the River, will in most instances meet the expense.

Have likewise examined a contemplated cut between the Shubenaccadie River, at Barney's Brook near Black Rock, and the lower extremity of the Grand Lake. The fall as before stated is 12 feet and 11 inches, the distance in a direct course about 5½ miles.

By adhering to the general direction, an expensive aqueduct and deep cutting will be experienced near Mr. Tremain's clearing. Upon pursuing the natural openings of the country, the course is thrown so near the Shubenaccadie Valley, that no material saving of distance can be effected.

I have, from the following considerations, abandoned the present idea of this Route :—

1st. The expense of excavating five miles of Canal by a line moderately level, will amount to . . .	£10,000	0	0
2d. Aqueduct and extra cutting,	4,000	0	0
Expense of this Line,	£14,000	0	0
3d. The expense of one Lock and Waste Wear re- quired for perfecting the Navigation of the Shu- benaccadie, between Black Rock and the Grand Lake,	1,659	10	0
Difference of Expense for a saving of two miles, .	£12,340	10	0

RESERVOIRS.

A permanent Water supply for the Summit or First Shubenaccadie Lake, may be obtained from Cranberry, and Lake Loon ; an auxiliary Reservoir of 250 acres, may be formed upon Loon Creek, immediately adjoining the Dartmouth road. The Head may be raised 12 feet ; the extent of Embankment 82 yards ; the surface that may be flooded is comparatively of little value : the principal timber has been removed.

These Reservoirs, although only filled twice during the season, are abun-

stantly ample to supply any deficiency by lockage, evaporation, or absorption, as will appear by the following statement :—

Cranberry Lake contains 20 acres,
Lake Loon, 320 do
The Proposed Reservoir, 250 do

Total, 590 acres, = a superficial area, of 25,699,400 feet.

Suppose the above Lakes to be available only to the depth of six feet; and filled twice to this depth during the season; we should then have 25,699,400 x 12 equal to 308,392,800 cubic feet of water. Allow, for a fair Canal Trade, ten boats upwards and the same number returning, each day, for six months of the year, or 2880 Boats: for the passage of each boat, 9500 cubic feet of water is required: therefore 2880 x 9500 is equal to 27,360,000 cubic feet, of waste by Lockage: leaving 281,032,800 of cubic feet, for evaporation absorption, and the purposes of machinery.

Abstract Estimate of the Expense of making a Canal from Halifax Harbour, at Dartmouth, to the Basin of Mines.

Commencing 4 feet under Low Water, Halifax Harbour; Timber of Coffier dam for entrance Lock = 3600 feet, at 25s. per hundred,	£ 45 0 0
Workmanship of do. Iron Keys, and draining,	83 0 0
Cutting and embanking Canal Line 1076 yards x 20 = 21,520 cubic yards, at 2s. per yard,	2,152 0 0
Lock Pits excavating partly rock = 28 x 9 x 3½ x 8 = 6272 cubic yards, at 2s. 6d. per yard,	784 0 6
Constructing 8 Locks, with Lock Gates, Cills, and in every respect corresponding with the specification, at £1524 each,	12,192 0 0
Two Canal Draw Bridges, each £193,	386 0 0
	<hr/>
	£15,642 0 6

Cutting at Dividing Ridge 620 yards x 20	= 12,400 cubic yards,
Three Lock Pits, = 28 x 8 x 3½ x 3 = 2,352 do	
No. 1. Diagram 750 x 25 = 18,750 do	
„ 2. Wedge 340-2 x 3 x 19 = 9,690 do	
„ 3. Parallelog'm. 230 x 19 x 3½ = 14,564 do	
„ 4. Top Wedge 130-2 x 19 x 2 = 2,470 do	
„ 5. Pyram'l. slopes 130-3 x 2 x 3 = 258 do	
„ 6. Top Wedge 100-2 x 19 x 2 = 1,900 do	
„ 7. Pyram'l. slopes 100-3 x 2 x 3 = 198 do	
„ 8. Wedge 100-2 x 3 x 19 = 2,856 do	

Excavation, at 1s. 3d. per yard, 65,432 cubic yds.	4,089 10 0
Retaining Walls, 460 yards lineal, at 10s. per yard,	230 0 0
Locks No. 9, 10, and 11 at £1490 each,	4470 0 0
Removing Tree Roots, and widening Channel of First Shubenaccadie Lake, near Reeve's Saw Mill, . . .	30 0 0
	<hr/>

Carried over, £24,461 10 6

Amount brought forward,	£24,401 10 6
Lock No. 12, and Lock Pit at Reeve's Mill,	1,600 0 0
Waste Wear between Lock No: 12 and 13 = 60 feet in width, or 120 solid yards of masonry, at 15s. per yard, with Flood Gates,	107 0 0
Cutting 800 yards of Canal parallel with River, partly rock = 800 x 20 = 16,000 cubic yards, at 2s per yd.	1,600 0 0
Locks No. 13, 14 and 15, including excavation of Lock Pits, at £1475 10s each,	4,426 10 0
Removing stones from the narrows, between Second and Third Shubenaccadie,	25 0 0
Lock No. 16, and Waste Wear below Fletcher's Bridge, Lock 114 feet rise, £1613 10 } Waste Wear, 163 9 }	1,776 19 0
	<hr/>
	£32,220 0 6
Lock No. 17 and Waste Wear, between the Fourth Shubenaccadie and Grand Lake,	1,659 10 0
Lock No. 18, and Waste Wear, at the bottom of rocky falls, Shubenaccadie River,	1,659 10 0
Three Coffe Dams for securing the building of Lock No. 16, 17, and 18, at £128 each,	384 0 0
Cutting through Bayley's Point 400 x 20 = 8000 cubic yards, at 6d. per yard, soft clay soil,	200 0 0
Removing stones and trees from the Shubenaccadie River; and constructing Reservoir, upon the Loon River,	220 0 0
Adding draws to three Road Bridges, at £115 each, including machinery, &c.	345 0 0
Lock No. 19, Tide Lock and Waste Wear,	1659 10 0
	<hr/>
	£40,124 9 6
Ten per cent for contingencies, expense of manage- ment, &c. &c.	4,012 8 11
	<hr/>
Total Expense,	*£44,136 18 5
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Total expense of a Canal, with <i>Eight</i> feet depth of water and commensurate Locks, is	£55,344 7 5

The dimensions of a *four* feet Canal, adapted for boats of 30 tons, are as follows,

Forty feet in width at the water level, 28 feet at bottom, and 51 feet at top bank: the slopes in cutting are one and a half horizontal to one perpendicular.

The Locks, 74 feet within the Chamber, one hundred and seventeen feet to extremities of Wing Walls, and 13 feet in width.

*The Expense of the Canal terminating at the Dartmouth Lake is	
£44,136 18 5 less £15,642 0 6 equal to	£28,494 17 11
Add cost of Railway to the Harbour	1,000 0 0
	<hr/>
	£29,494 17 11

The dimensions for an eight feet Canal, adapted for ordinary class Schooners, are as follows :

Sixty feet in width, at the water level, 36 feet at bottom : slopes, one and a half horizontal, to one perpendicular.

The Locks, 90 feet within the chamber, 19½ feet in width, and 125 feet between extremities of Wing Walls.

The Benchings, Paths, and Slopes for Embankment, are the same by either depth, and are all particularly described in the subjoined specifications for the execution of the work, and accompanied with designs, elevations, &c. for the Lockage.

By the foregoing estimates it will be observed, that nineteen Locks are required to perfect this navigation ; besides several Waste Wears of dimensions competent to preserve the artificial Works from injury during the spring and autumn floods. These Waste Wears, have generally been placed so as to discharge themselves into expanded bodies of water ; thereby securing a more perfect Canal, than under any possible arrangement for a continued River Navigation.

After completing this work ; the most eligible and least expensive mode of navigating these waters appears to be by *Steam Tow Boats*, of twelve or fourteen horse power. A boat of this description will make a passage from Halifax Harbour to the mouth of the Shubenaccadie, 55 miles, in fifteen hours ; carrying with her four Trade Boats each of 30 Tons burden.

The expense of a Tow Vessel and machinery, adapted for passing the Locks will amount to £2000 ; and may be navigated by two men. The transit per ton will be,

Interest upon £2000 at 15 per cent is per day,	£1	0	0
Expense of two Men,	do	15	0
Four cords of Wood,	4	10	0

Expense £6 5 0 for 120 Tons of produce or goods, or 12½ pence per ton, upon a distance of 55 miles.

On the whole it appears to me, that no obstacle or difficulty will be experienced, upon any part of the Route, by adhering to *either depth* for canal water.

After a fair competition for executing the works has been tried, and the offers found above what has been stated in this Report—from confidence in the estimates and experience of similar works, I will find no difficulty to provide respectable Contractors, to do *all the Work*, and in a *proper manner*, for the Sums specified.

FRANCIS HALL, Engineer.

Halifax, 17th June, 1825.

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RESOLUTIONS

OF THE

CHAMBER OF COMMERCE OF HALIFAX,

At a Special Meeting, held on the 9th July, 1825.

THE Chamber of Commerce having this day taken into consideration the subject of opening a Navigable Communication from Halifax to the Basin of Mines, in the Bay of Fundy ; and had before them the Report of Francis Hall, Esq. the Engineer lately employed to examine the practicability of this important work, and estimate its expense ; also the Plans and Sections which have been prepared : have *unanimously* **RESOLVED** as follows :

That the execution of the contemplated Canal, appears from the Report of Mr. Hall, to be perfectly practicable ; and can be effected at an expense comparatively moderate.

That, in the opinion of the Chamber, it has become indispensable to the future prosperity of Halifax, as a place of Export, and to the Province in general : that this great public measure should now be commenced ; and every exertion made for its speedy completion : since while deprived of the facilities which Water Carriage affords, the conveyance of goods and produce, between Halifax and the Interior, will ever be attended with an expense, which *must* operate most injuriously against their mutual intercourse.

That in the execution of the proposed Canal, so many advantages will follow from forming the works suitable for an *eight* feet Navigation, that the Chamber recommend *this* as by far the most useful depth ; and that it should be *completed* to the Harbour.

That a Committee be appointed to communicate with his Honor the President and his Majesty's Council, as to the most effectual measures to be adopted for promoting this highly interesting object.

Resolved that the President, Mr. Collins, Mr. Boggs, and Mr. Hartshorn, be a Committee for this purpose : and that the Representatives for the Town be requested to assist them.

REMARKS

ON THE

Shubenaccadie Canal.



THE preceding pages, with the Plan and Map accompanying them, will, it is presumed, convey to the Public, clearly and satisfactorily, the manner in which it is proposed to open an Inland Navigable Communication between the Harbour of Halifax and the Bay of Fundy—the facilities that exist for the execution of this important work—the probable expense attending it—and the encouragement, which the Legislature has provided for those who engage in the Undertaking, by securing to them, with exclusive privileges, the rights of a Chartered Company.—With these particulars it will not perhaps be unacceptable, on a subject of so general interest, to receive a brief Description of the Line of Country, through which the Canal is intended to pass—and to which its advantages will extend,—an Account of what has already been done in furtherance of this object,—and some Notices on the Results which may be expected from its completion ; and on the measures proper to be adopted for accelerating the accomplishment of an enterprise, now so generally and anxiously desired.

The River Shubenaccadie has its rise in a small piece of water called Cranberry Lake, in the Township of Preston, and four miles east from Dartmouth.—A scanty stream, flowing westward, connects it with the extensive Reservoir of Lake Loon,—whose waters, at their outlet, follow the same course, and descend into the South East part of Lake Charles.* This *fine* body of water, deep and capacious, lies on the summit level of the proposed CANAL—extends from North to South †4300 yards—and occupies the higher portion of the extensive Valley, which reaches, with varying Breadth and Elevation, from Dartmouth to the Basin of Mines ; dividing the Province, by a well defined line of separation into two portions nearly equal. It is here that some of the indispensable requisites to the success of an Inland Navigation are already provided.—This large Lake occupies the whole length of the Summit Level ; will from its own abundance during the greater part of the year, furnish water for the Locks at each of its extremities ;—and, lying below Lake Loon, can derive, from that

*Lakes Charles, William, Thomas, and Fletcher's, are generally distinguished as the First, Second, Third, and Fourth Shubenaccadie Lakes.

†About 2½ miles : 1760 yards being one mile.

inexhaustible resource, a supply sufficient for any probable transportation, and for all the waste and deficiencies produced by evaporation or other causes.—These are circumstances in the highest degree favorable to the intended Communication. From the two extremities of Lake Charles, the descent is southward through the Dartmouth Lakes to the Harbour; and northward, through the beautiful expanse of Lakes William and Thomas, the Rapids at Fletcher's, and the fourth Lake, into that noble sheet of water, called with much propriety the Great Lake: and thence along the Channel, in which the River, under the name of the Shubenacadie pursues a course of nearly thirty miles, to its union with the tides of the Bay of Funday—These Lines of descent are divided on the plan, into *Four* distinct *Sections*, unequal in size, but proportioned to the extent of artificial works required on each; and it will perhaps be most convenient to refer to them in the same manner.

The *First* Section reaches from the waters of the Harbour to the south end of the Dartmouth Lakes, a distance of 1300 yards, with a rise of 68 feet, above the Line of High Water in Dartmouth Cove. The *Second* includes these Pieces of water, [in length 3100 yards] and passes over the Portage, 1400 yards wide with a further rise of 27 feet, into Lake Charles—making the whole distance, from its south shore to the Harbour, but 5800 yards or about $3\frac{1}{4}$ miles—To surmount this Ascent Eleven Locks are required; of which *Eight* will be placed in the lower Portion. The expense of constructing these last has been estimated at nearly two fifths of the cost of the whole Canal; and this consideration, with the facilities that exist for supplying their place by a Railway, has had weight in recommending the *latter* as the *best* mode of connecting the Dartmouth Lakes with the Harbour; it is however subject to objections which will be afterwards noticed. Ascending the Portage to Lake Charles, the site of the other three Locks is fixed on the Barren, in a rocky Hollow, through which the passage of a large stream, formerly running Southward, may be distinctly traced.

This Lake and the Descent from it into Lake William, distant 1100 yards with a fall of $39\frac{1}{4}$ feet to the Cill of the lowest Lock, are included in the *Third* Section; for which four Locks and other artificial works are necessary. The whole of the remaining Line through the Lakes and to the Mouth of the River, is comprehended in the *Fourth* Section: and to complete this part and make it navigable throughout, with safety and convenience, four Locks only are stated to be required; and are allotted to those points where the level of the water can be raised to a sufficient height above the Rapids and other Obstructions of the present Channels. The difference between the estimated expense, for the *Second*, and that for the *Third* and *Fourth* Divisions is but of trifling amount.

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Having thus shortly adverted to the Valley of the Shubenaccadie, the waters that occupy it, and the works by which they may be adapted to the purposes of navigation, let us direct our attention to that part of the Interior, through which it passes. This, if examined even in a cursory manner, will be found very distinctly divided, at the *Point* where the River issues from the Great Lake, into two Portions widely differing from each other in soil and aspect. The District which extends towards Dartmouth is generally rocky ; and wholly unfit, some small spots excepted, for profitable cultivation.—Forests of Hard Wood and Hemlock Trees intermixed with the Spruce and some Pines, and separated by tracts of barren land, cover the shores of the Great Lake, and the rude and broken hills that rise abruptly from the East side of Lakes William and Thomas : and Groves of the same description are observed extending Eastwardly from different parts of Lake Charles. On the western side of this last, and for some miles to the northward, all near the water appears waste and desolate. In this quarter a chain of small Lakes, discharging into Lake William, occupies the low Lands—and was once thought a preferable line for a Canal, to communicate with Bedford Basin. A careful survey proved it to be impracticable.

On the other Hand, the District, which lies between the Great Lake and the Shores of Cobequid Bay, presents an appearance altogether the reverse. The Slate, Granite and other Hard Rocks of the Southern Division are no longer seen. The Country is low and fertile, adapted to agricultural purposes and the support of a dense population,—covered with useful timber—filled with Gypsum and Limestone,—and affording indications of extensive beds of Coal and other Minerals. This description belongs to a Tract extending many miles both East and West of the Shubenaccadie. In the immediate vicinity of the stream lie several valuable and well managed Farms ; to which are attached the rich Intervals or alluvial deposits that border its course as far down as Fort Ellis. From this Point, the upward View of the Valley—its sides gently receding, and adorned with a succession of cultivated fields and woodland—and the Full and ample current of the River, winding its course between them—present a scene of peculiar beauty. Below this, till it enters the Bay, its banks chiefly consist of cliffs of Gypsum and Limestone. Nor are these Fossils restricted to this part of its course ; they are also found at the Angle formed by the River, where it issues from the Lake, and in several other places along and near its channel. The Black Rock, to which the tide reaches, is wholly Limestone ; and near it, Coal of the finest quality and in great abundance has been lately discovered, and in a favorable situation for water carriage. The *Point* when the River leaves the Lake is but *twenty one* miles from Halifax Harbour, passing in a straight line through the Six

Lakes ; which are, in many places, extremely deep, and, in all, sufficient for Navigation.

The Breadth of the Shubenaccadie at its mouth may be stated at nearly half a mile,—and the rise of the Tide at from 36 to 50 feet. At Fort Ellis, 14 miles up the Stream, its width is about 400 yards, and depth at high water over 20 feet. At Harley's Point, which has been chosen for the site of the lowest or Regulating Lock, the water at full tide will be from ten to fifteen feet ; and the distance between the Banks very considerable.—Thence upwards the Channel is wide and deep ; and will be further enlarged by the operation of this Lock in raising the water to a level with its Walls.

The Valley of the Shubenaccadie, as might be expected from its situation, receives the surplus waters from the whole Country, both East and West, for many miles,—collected between the numerous low Ridges that diverge on each side from the River. Of the Streams that flow into it from the East, the Principal are the Stewiack and Gay's River ; on the opposite Bank it receives the Nine and Four Mile Rivers.

In the Stewiack, which unites with the Shubenaccadie above Fort Ellis, the Tide ascends about 7 miles ; and beyond this distance, according to the Report of intelligent Persons, its Course may be followed for nearly forty five miles : affording a passage for small Boats, and for the conveyance of Timber ; of which large quantities are annually sent from its Banks to the Mouth of the Main River, and there shipped for exportation. In the Eastern Division of the Province, there are few finer Agricultural Tracts than those which compose the Settlements on the Stewiack. The Inhabitants are numerous and enterprising, and have long supplied this market with Cattle and Produce from their Farms. Along the River, and between it and the Musquodoboit, (which at the distance of four miles, pursues a parallel Course to the Westward through a thriving district) fine Oaks and other Timber for Ship building, with Trees suitable for Masts and Spars, are found in abundance, and in situations whence they can readily be conveyed to the River side ; and there is no reason to apprehend a failure in the supply for many years.—At two places, about 14 miles above the tide and one mile from the River, veins of Coal rise to the surface, and are probably extensive. In their vicinity, Freestone, Lime, and Roofing Slate, of the best kinds are found : and Salt Springs of unusual strength have also been discovered, which hereafter may become of great value and importance.—To the conveyance upon the Stewiack, of all the productions here referred to, it is confidently stated that there exist no material obstacles.—From the Bridge, which crosses it thirty miles above the tide, down to Fort Ellis, the impedi-

ments may be easily removed from the Channel ; and then Boats of ten tons Burthen may ascend the whole distance.

Below the Black Rock, Gay's River enters the Shubenaccadie after a course of about six miles from Lake Egmont, receiving in its progress two Branches, of which one, coming from the Northward, unites with it about a mile below the Lake.—On this stream a vein of Coal of good quality has been laid open by the water ; and near it are Iron Ore, Limestone, and Slate. The Pine, Spruce and other valuable Timber trees abound in this quarter ; and the Lands, although but partially settled, are considered excellent.

Passing Eastward from the Head of Lake Egmont, a low and level space of about two miles and an half—conducts to the great Bend of the Musquodoboit ; which there changes its Western Course and flows to the Sea Shore.—The very valuable produce of the large Tract watered by this fine River, will, probably at no distant day, be transferred across this narrow passage, and descend through Gays River.

Proceeding now to the West Side of the Shubenaccadie, we find the Nine and Five Mile Rivers flowing into it, after a course of several miles from the West, through a Country which, if not so extensively settled or abundant in Timber as the Eastern Division, is in all respects its equal in the quality of the soil, and its fitness for agriculture ; and is now rapidly improving by an industrious, though scattered Population.

The preceding Description can convey but a faint outline of the Country which borders on the Shubenaccadie, or is naturally connected with it ; but may suffice to prove—that this Portion of the Interior not only possesses in itself Resources adequate to the profitable maintenance of the proposed Navigation ; but is also, by its acknowledged value and importance, entitled to claim, from the Province, the adoption of a measure which, above all others will tend to draw these forth, and bring them into useful operation. This Result however may be considered as but one, and perhaps the least, of the benefits to be expected from the success of the Undertaking. Its influence will be felt in more distant quarters.—The Basin of Mines forming the East Branch of the Bay of Funday, (sometimes designated by the name of *The Cobequid or Colchester Bay*.) spreads itself wide and deep into a District which, if regard be had—either to the Quality of the Soil and its capacity to produce all the necessaries of Life—to its healthful climate—or to the variety and abundance of its Minerals, will be found inferior to no part of the Northern Colonies, or even of Great Britain itself. Around this spacious Basin, and composing its extensive Shores, and the Banks of the numerous Rivers, or rather Estuaries, which it receives,

lies an immense Alluvial Deposit, produced by the Extraordinary Tides of the Bay, and exhibiting that formation in most unusual extent and richness.—Here therefore, and in its vicinity, were the first Settlements of the Province formed; and here, in the old Townships of Cornwallis, Horton, Falmouth, Windsor, and Newport, and in those more recently founded at Truro, Onslow, and Londonderry, (all places known to the early French Inhabitants under the common denomination of *Les Mines*) we acknowledge our finest, best cultivated and wealthiest agricultural Districts.

Beyond the Passage from the Basin into the Bay of Funday, commences its Northern arm or Branch called Chignecto Bay, stretching North East between Cumberland and Westmoreland, until only a narrow Isthmus separates it from the Gulph of St. Lawrence; enriching these Portions of the two Provinces, here adjoining each other, with an extent of Alluvial Soil equal if not superior to that upon the Basin of Mines; and bestowing upon both countries the advantages of a water conveyance for their valuable and abundant produce. In this quarter also, Coals and other minerals present another source of wealth to the Inhabitants; and increase the number and value of their exports

Such then being the appearance presented by the valuable and improved Districts, around the Bay of Funday and along its extended Line of Coast, it must be with reference to *these*, and not alone to the *immediate interior* of Halifax, that we are to consider the question of the importance of the *Proposed Undertaking*: we must fix our attention on the *whole* of this Country, and take into the account both its *Resources* and its *Productions*.—We must contemplate the actual state of its *communications* with the Town, as well as the nature of the *Intercourse* which at present exists between them: then, and not before we shall receive a distinct impression of the Results to be *immediately* derived from perfecting the Navigation of the Shubenaccadie.—And after examining it in all these relations, we shall be disposed to acknowledge, that—whether viewed as a cheap, safe and expeditious method of transporting the heavy agricultural Produce, the Timber, and the numerous other objects of internal Trade, which those parts of the Province so abundantly furnish;—or as presenting the sure—direct—and most effectual means—to excite the Industry and develop the Resources of the Colony,—the *Canal*, whose course we have described, is justly entitled to the support and countenance of every Friend to Nova Scotia.

Upon a project thus possessing so many claims to the notice of the Public; it will not be supposed that the Local Government could continue indifferent. Accordingly we find that as early as the year 1797, it was brought before the Legislature—by a gentleman whose mind, ever alive to the true interests of

the Province, had been forcibly impressed, during a passage performed a short time previously in a small boat through the lakes and down the Stream of the Shubenaccadie, (then scarcely known and thinly settled,) with the facilities there presented for introducing the conveniences of Inland Navigation.—His representations, the confidence reposed in his practical experience, and the conviction he produced on the Members of an Assembly (composed of most able and enlightened men, well acquainted with the situation and necessities of the Colony,) that its advancement would be effectually promoted by a measure, which appeared to him perfectly feasible,—induced the House to appropriate the sum of £250 for its further investigation. This sum was entrusted to a Committee who saw clearly the great importance of the object, and the necessity of a careful enquiry into every thing connected with its execution. The services of a skilful Engineer, Mr. Hildrith, who had acquired much experience in that branch, were obtained; and in the autumn of the same year he returned his Report and Estimate, which gave a satisfactory confirmation of all that had been stated with regard to the practicability and moderate cost of the work.

In the Session of 1798, the friends of the measure, acting upon this Report, introduced into the Assembly a Bill for Incorporating a Company to complete the Canal; and so well was it received, that no fears of its failure existed; and all necessary arrangements were actually in progress for the formation of the Company, and raising the funds required for the undertaking.—In this stage the Letter of Sir John Wentworth, then Governor of the Province (which is inserted in the preceding Pages) was addressed to the Principal Members of the Association; and conveyed his favorable opinion of the Plan, and intention to afford them every assistance in his Power towards its success.—But the whole measure was unexpectedly defeated by the obstacles which (from causes now not easily to be ascertained) arose in the House of Assembly, to the Progress of the Bill in the form in which it was first introduced by its Supporters; and some restrictions having been inserted, which it was supposed would operate injuriously upon the Associates in the prosecution of their design, they abandoned, for the time, their application for the Privileges of Incorporation; proposing to renew it under more propitious circumstances. It must however, be admitted, that at this period, the state of the Province, would have rendered it extremely inconvenient and difficult to raise even the moderate sum, at which, according to the estimate of Mr. Hildrith, the Canal could have been completed.

During the succeeding years till 1814, although many causes combined with Political events to divert the Public eye from this Enterprise, still its impor-

tance and necessity were generally confessed ; and its first Supporters continued sanguine of its eventual and successful accomplishment.

But in this interval, one of those Gentlemen, during a temporary residence in England, bestowed great attention upon the different methods, that had been adopted there, for the improvement of Inland Navigation : and obtained, from authentic sources, explanations and information relative to the difficulties which, it had been suggested, were likely to occur in the progress of the work.

After his return he succeeded, in 1814, and 1815, in obtaining from the Legislature, a sum of money for the purpose of improving the existing passages of the Shubenaccadie, and exploring the Country between the Lakes and Bedford Basin. The amount entrusted to him proved sufficient,—not only for the removal of the principal obstructions in the River below Fletchers Bridge, and rendering that point accessible, during the Spring and Autumn, by large Boats from the Bay shore : but also for ascertaining with correctness the Height between Lake William and Bedford Basin, and re-examining the Levels towards Dartmouth. This work was carefully executed and designed by Mr. Gill ; and demonstrated the superiority of the Dartmouth Line, as well as the accuracy of its Survey by Mr. Hildrith.

During the Administration of the Earl of Dalhousie,—a name ever dear to Nova-Scotians, and recalling, with pleased and grateful recollections, the zealous, enlightened and munificent Friend of their Country, the Patron and Advocate of every measure, and of every Institution, directed to its advancement or prosperity,—an object, of so interesting a character as this Extensive Inland Navigation, could not escape his notice ; it deserved and received his personal Examination ; this confirmed the impressions, which the previous surveys had given, of its usefulness.—He therefore deemed it worthy of being included, among the Suggestions for the improvement of the Province, which, in opening the Session of 1820, he addressed to the General Assembly. It is mentioned in these terms : “ I also submit to your consideration the practicability of a Canal “ to connect the Harbour of Halifax with the Basin of Mines, by the “ Lakes of Shubenaccadie. This is a work of great importance, and to be attempted with great caution : It promises great public advantages : but I do “ not know the extent of its difficulties : and to ascertain these by competent “ Engineers is all I mean to suggest at present.” To this part of the Speech on that occasion the House of Representatives replied “ We thank your Excellency for calling our attention to the proposed inland Navigation between the “ Harbour of Halifax and the Basin of Mines. We shall carefully consider this

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"interesting Subject ; and endeavour to ascertain the extent of its difficulties
"and the advantages likely to result from its completion." Accordingly a Com-
mittee was appointed with directions to report "what sum would be necessary
"to enable his Excellency to ascertain, by competent Engineers, the practica-
"bility of the proposed Inland Navigation ; and the probable sum of money
"which would be required to Complete it." In performing this duty informati-
on was solicited from the Honorable the Treasurer ; who having first suggested
the measure and taken the most active part in its support, was intimately ac-
quainted with its various details.—His letter to the Committee, which forms part
of this Publication, was adopted into their Report : and by their recommenda-
tion, the sum of £200 was granted towards the expense of a more particular
Survey. But on enquiry, it was perceived that the amount was inadequate ;
and would not suffice for that minute investigation, which now became
indispensable in order to satisfy the existing doubts and uncertainties,
(entertained perhaps not unreasonably, considering the number of years
elapsed since Mr. Hildrith's Report) and which the authority of an
Engineer of acknowledged experience was required to remove. For this
purpose effectual Arrangements could only be made by the Legislature ;
and further Proceedings were therefore delayed until the Session of
1824 : when a further sum of £300 was appropriated to procure the
services of a Gentleman of competent ability, for the execution of that most
important task.—But to encourage and facilitate the formation of a Company
for completing the Canal,—(in case the survey proved satisfactory,)—
and that all who engaged in it might know explicitly the extent of the encour-
agement which it would receive as a *private Undertaking*—the Act of
Incorporation, which commences these pages was past by the Assembly.—At
the close of the Session His Excellency Sir James Kempt thus noticed the sub-
ject "The internal communications of a Country tend so manifestly to its im-
"provement, and to increase the productive Industry of its population, that I
"shall lose no time in employing the means, which you have placed at my dis-
"posal, to ascertain the practicability and expense of forming a Canal to unite
"the waters of the Basin of Mines with the Harbour of Halifax."

A few months afterwards, the Writer of these Remarks was favored with an
opportunity of submitting the Papers and Plans, connected with the proposed
Navigation, to an Engineer of the first eminence in the Profession, William
Chapman Esq. of Newcastle ; and of stating the doubts entertained with regard
to the execution of the work. These, after the necessary enquiries, he very
satisfactorily and most obligingly explained ; and soon afterwards transmitted the
Letter (at page 16) which contains his very favorable opinion of the Enterprise.

The Administration of the Provincial Government had now, in consequence of his Excellency's absence in England, devolved on the Honorable M. Wallace as President. To him—whose sentiments with regard to the Canal continued unchanged, and who felt a deep interest in the question of its practicability, it could not but prove extremely gratifying to learn—that an Engineer, of established reputation for skill and experience, resided in Upper Canada; and that his services might be procured for the examination of the Shubenaccadie. An application was therefore made by the President to Mr. Hall; and an assurance received from this Gentleman that, in the following Spring he would repair to, Halifax, and execute the survey. He accordingly proceeded hither; and in the month of June last, inspected the whole Line—from Dartmouth to the Basin of Mines—with the greatest care:—ascertained the depth of the Lakes and different Channels—the sources for supplying the water requisite for the Lockage—the nature of the obstructions through the whole Valley—and the quality of the Soil and Rocks in those parts where artificial works would be necessary: proved the accuracy of the levels formerly taken: and selected the proper sites for the Locks, Excavation, Embankments, and other constructions which he considered necessary for the completion of the Canal.

Upon his return from this examination, and after completing the calculations for forming a Navigation of the respective depths, of *four feet and an half*, and *eight feet* of water, and satisfying himself fully on all points connected with the operations through the whole line, he prepared his Report and Estimate (inserted above at page 18) with Plans and Designs for the work; and a most minute and particular Specification of the mode of executing every part of it. These papers, with the letter (at page 17) addressed to his Honor the President, and the Plan herewith, connected with the particulars already noticed, supply, in the fullest and most satisfactory manner, all the information necessary for deciding the QUESTION—whether the SHUBENACCADIE NAVIGATION be a *practicable* measure, and within the limits of a *reasonable* Expense. Of this a doubt ought not, *now*, to remain. The Report of Mr. Hall—the Opinion of Mr. Chapman—and the accuracy of Mr. Hildrith's Survey, confirmed, as to all the material parts of the Line, by Mr. Gill—are conclusive:—and must convince the most timid, that the Enterprise is altogether free from difficulty, and of easy accomplishment, in all that concerns the operative part; and to an extent and of dimensions far beyond what its first Supporters thought either possible or expedient; and for a sum, too, very greatly below the computations of the most sanguine. Indeed as respects the Expense, *no uncertainty can* exist; it is effectually removed by the explicit Tender of Mr. Hall, to procure the completion of the whole

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Canal, in conformity to the Specifications, for the sums he has stated :—an offer which attests his confidence in the Prices affixed to the different parts of the work ; and his perfect reliance on the Results of his own very extensive Experience.

A reference to his Report will shew, that he had under his consideration two distinct Scales for the execution of the work—one adapted to a depth of *four feet and an half* of Water—the other to *eight feet*. The expense of the former he has fixed at £44,136 Currency, including ten per Cent for Contingencies—a sum which, although apparently far above Mr. Hildrith's computation for a Canal of four feet, is in truth a close approximation to it— if the increase in price of wages and materials since 1797 be considered ; as well as the different and very superior manner in which Mr. Hall, by the Specification, requires the Locks Embankments and other works to be constructed.

The Estimate for completing a Navigation of the depth of *eight feet*, in all parts from the Harbour to the Basin of Mines, and of proportions in every way commensurate, is £55,344, Currency ; being an addition, of *one fourth* only, to the expense of a Communication of *half* the size—To which of these dimensions the preference should be given can hardly become a question. When Mr. Hildrith was acquiring his practical knowledge of Canals, few or none had been constructed larger than that which he has recommended ; four feet being considered sufficient for the Barges in common use : But in the more extensive adoption of this method of conveyance, much inconvenience has resulted from employing a small depth of water. It occasions so great a resistance that the Boats cannot pass with a speed exceeding about three miles the hour ; while, in a large and deep body of water, the same force will produce nearly twice that velocity. This increase becomes of great consequence wherever the transportation required to be frequent. Besides in the smaller Canals, even the ordinary rate of motion creates an agitation and current which seriously injures their sides,—unless constructed in a very expensive manner,—and occasions a continual outlay for Repairs. The Evaporation also, from the shallow water, is found very many degrees beyond that to which the deeper Canals are subject. And, indeed, of the very great number which have been completed, there are few where it has not become, after a few years, a subject of constant regret to the Parties that too confined a Scale of Construction had been originally adopted. On these and other accounts, the largest dimensions, which the Supply of Water will authorise, are now preferred in the Planning of similar Works ; and are generally

found most advantageous to the Proprietors—compensating for the increased Expense, by the reduction of the Annual Repairs; and by the greater use, and facility of the Communication.

Now all these considerations are applicable to the Line of the Shubenacadie—for there the Supply of Water for Lockage may be deemed unlimited; the whole extent of Excavation and Embankment, is but 3800 yards; and through all the remaining distance the depth of Water exceeds eight feet. To these inducements for adopting the increased dimensions, on which the Estimate of £55,344 is founded, the most powerful yet remains to be added—the certainty that thereby the Canal will be navigable for Schooners of near 80 Tons Burthen—the class of Vessels commonly used in the Bay of Funday—which will then be enabled to pass, with their Cargoes, to and from this Harbour, without delay or danger,—or even the inconvenience of a partial unloading.

Next to the *Expense* and *Dimensions* of the Canal, the *manner of passing* Boats and Vessels through it, after its completion, appears the most material circumstance to be provided for. On this point difficulties had been apprehended sufficiently numerous, if well founded, to render the Communication in a great measure unavailable. It was objected to the formation of a Regular *Towing Path* that it was, on the greater part of the Line, wholly impracticable—or from the nature of the Shores of the Lakes, would be entirely useless: That these, during the greater part of the Season, are too much agitated by the strong winds prevailing throughout the Valley, to permit the safe and uninterrupted *Passage* of heavy laden Barges across their exposed surfaces: and that with *Sails* the progress towards the Harbour must be slow and tedious, the wind blowing almost constantly from the Southward. These objections are doubtless greatly overrated; but they are completely removed by the method which Mr. Hall suggests for carrying on the Navigation. This consists in the employment of Steam Boats for towing or tracking Vessels, Barges, &c. through the whole distance from Dartmouth Lake to the Bay—and it is evidently appropriate and effectual. He states that the Voyage will, by their means, be effected in the short space of fifteen hours; and as the Channel of the River is sufficiently wide for their use, and the Banks solid, there will result none of those injurious consequences which have hitherto prevented the application of Steam Power upon the ordinary Canals:—the Lakes are in every part free to its operation; and even in the artificial portion of the Line, the extent* of Cutting and Embank-

*In the Third Section 1100 yards: in the Second 1400 yards. The Tow Boats would not be required on the First Section.

ment is comparatively so short, that *there* it will not be found difficult to secure the Walls against the effects of too rapid a motion. His recommendation, therefore, whether considered with reference to its *efficiency*, or to the *moderate expense* attending its adoption, supplies all that was uncertain in this particular.

As connected with Mr. Hall's Report there remains to be noticed the proposal of a Railway for the *first* section. The expense of that part of a Canal, 8 feet deep, may be stated at £21,500; of the Railway, at something more than £1000. The difference is certainly great, and in favor of the substitution of the latter: the ground is also suitable, and the rise being but *one* in 564 yards, there seems no obstacle to the introduction of this mode of conveying goods from the Harbour to the Lake. Nevertheless it is to be feared that the adoption of a Railway will be most injurious; and deprive the Public of the principal advantages expected from the whole work. The purpose and intention of Canals or Railways is to reduce the expense attending the transportation of articles, of great bulk or weight and small comparative value, from the place where they are produced to that where they are to be consumed: and this object can only be attained by so arranging the parts of the Communication that, during the passage, no transfer of the goods from one kind of conveyance to another will be necessary: because the charge of unloading and reloading them would in many cases equal that of the *whole* freight;—and materially enhance the price of Commodities which, possessing in themselves little intrinsic value, are commonly sold for the cost merely of the labour bestowed upon them. This principle an examination of any extensive Canal or Rail Road Lines will render perfectly evident: and it will be perceived that the convenience they afford, and the rates required for carriage over them, stand in exact proportion to the regularity and *uninterrupted* nature of the Communication. Let us then suppose the Gypsum, Limestone, Coal or Timber of the Interior, or the many other Building Materials for which this Capital provides an ample market, brought, in the ordinary Canal Boats, to the Point where the proposed Railway commences. Here these heavy articles must be transferred to the waggons by which it is traversed; and, on reaching the Shores of the Harbour, a second process of the same kind must be undergone, before they can arrive at Halifax. Without attempting to compute the expense of these operations, it is plain that they will greatly enhance the price of the articles to the consumer, and exclude them from a competition with those which can be brought by an *uninterrupted* water

carriage from other quarters. Besides, the placing a Railway at Dartmouth will deprive Sea Vessels of the incalculable advantage to arise from the direct short, and safe passage, which the continuation of the Canal into the Harbour will give them, through the Interior, to the Basin of Mines and the more distant Coasts of the Bay. And indeed, the lapse of a few years must discover so many inconveniences from any Bar to the navigation, that the apparent present saving will be found an actual loss to the Proprietors. These views of the Subject, doubtless, induced the Chamber of Commerce at Halifax to declare their decided preference for the completion of the Canal to the Shore at Dartmouth.

The limits of a Publication of this nature precluding further observation on the details connected with the *Execution* of the Canal, we must now proceed to that, which forms a most interesting part of the Discussion—the *Results* of the Enterprise:—In examining which we now assume—that the measure is perfectly practicable—that the depth of Eight Feet is to be adopted—that the Passage must be perfect to the Harbour—and that the whole Expense will be £60,000, including the cost of Steam Boats, Basins, &c. These Questions then, arise: What advantages will the Public derive from the Navigation? What returns may those expect who contribute the means of its completion? The answer to these Enquiries must decide whether it be expedient, either as a Public or as a Private Undertaking. It is necessary however to premise, that a Navigable Canal is, in reality and effect, nothing more than a Road, or the means of Communication, between different parts of the same Country; but a Road on which articles may be carried at a far cheaper rate than is possible upon the best constructed Highway—because the power which on this is required to draw a weight of half or three quarters of a Ton, will on Water convey thirty Tons with an equal degree of velocity:—so that the expense for Land Carriage might be stated at forty or sixty times beyond that of the Canal Freight,—wherever the cost of constructing and maintaining the two Lines is in all respects equal. This of course cannot often be the case; but the low charge of one halfpenny per Ton per mile, made on many Inland Navigations, clearly proves the great cheapness of this kind of conveyance.

To proceed—the Benefit which the Province at large will derive from the Shubenaccadie Canal, although not reducible to any precise estimation, may nevertheless be appreciated in some degree under the following considerations—

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upon the Bay. There, we find nearly one third of the whole Population of the Province—yet, between that great portion of its Inhabitants and this Town the Trade now existing is notoriously limited and inconsiderable ; not because the articles which *they* consume cannot be procured on the most favorable terms in *this* place, nor because their produce does not *here* command a constant and extensive sale,—for the ability of each to meet the demand and supply is not to be questioned—but solely and entirely *because* the Commodities they mutually require cannot be conveyed, either to or from the Capital, unless by an expensive Land Carriage across the Province ; or by the tedious and too frequently dangerous passage around Cape Sable. The Roads from hence to the Settlements on the Bay are, it is true, comparatively excellent, but the distance of *forty-five* miles, which separates the nearest of them from us stands, under present circumstances, as a Barrier impassable except at a price which few of the objects of internal Trade can support. It is therefore no matter of surprise that the Inhabitants *there* regard a neighbouring Province as the natural MARKET for the disposal of their produce and obtaining all their supplies ; or that their connexions with it now appear so fully settled and permanent. The great convenience and facilities in transportation afforded by the Bay of Fundy first produced this Intercourse with New Brunswick, and will continue it in its present State, until the Obstacles which affect their Communications with Halifax shall cease to operate ; in a word,—until the price of Freight, or Conveyance hither, shall fall to that rate which will admit of a *choice* of Markets. Whenever that reduction takes effect, the People of those Districts, who now rarely visit this Town, will find *here* a *second* and, in many respects, a *far preferable* MARKET ; with a constant and profitable demand for Articles which at present cannot be brought hither, but are sent to increase the Exports of the Sister Colony. Perhaps it is only in this way that *they* can be secured from the loss consequent upon an over Supply of their Produce, or the increased prices incident to an unusual demand at particular seasons—results which are said to have occurred, not unfrequently, to those who resort to New Brunswick. If then, this Town,—the Capital of the Province, and natural Centre of its whole Commerce—stands thus separated, as it were, from all dealings with a large portion of the Inhabitants—perhaps also from that community of feelings and of interests which, wherever it has place, acts and reacts with reciprocal benefit to each—it must be evident that the *means*—whatever they be—which promise a closer connexion, a direct and constant Intercourse, an unlimited Exchange of their respective Merchandise, deserve every favor : and that if *these* be the consequences of

the execution of the Canal, they rank high on the list of its anticipated Benefits.

2d. The situation of the Port of Halifax.—If we advert to the manifest superiority which our Harbour holds—over all others in this Quarter of the World—in point of safety—of convenience of access at all seasons of the year—of relative position, and proximity to the neighbouring Provinces—and particularly in reference to the communication with the Mother Country and the Sugar Colonies,—it must be admitted that no Seaport of North America is in any degree so favourably situated as this, for becoming the centre of a most extensive Commerce, with all parts of the old and new Continents; none where so many circumstances combine together in laying the foundation of its future Importance and Prosperity. A glance at the Map of North America will confirm this assertion. The observer will instantly select *this* as a principal and commanding Station for Naval and Commercial Enterprise; as the Emporium of the British North American Possessions; and for the Key to their security. And, now, to bring all these, the substantial materials of Wealth and Greatness, into form, proportion and effective usefulness, the Mother Country, nobly dissolving the Bonds of that hateful Monopoly, under which the Colonies have been so long depressed—has bestowed the Gift of COMMERCIAL FREEDOM, with such full and liberal concession, that every local advantage may be confidently reckoned upon, in estimating the advancement reserved for this favored Province. Under the new System, now just commenced, Halifax, has acquired the privileges of a FREE PORT—a distinction due to the position it occupies, and leading directly to the most important consequences. Its Harbour is now declared the *Mart* for the Imports and Exports of the whole Province; and will undoubtedly become the *Centre* of all its Commercial transactions—the *Point* where the Coasting Trade will unite, and to which the Produce of that most valuable Branch of our Industry, the Fisheries, will continually be attracted by the Competition about to arise between our own and foreign Shipping,—for commodities which now, for the first time, both are alike permitted to transport from hence to other Countries. Here also we shall see established, what the severity of their Climate renders indispensable to the CANADAS during half the year—a *Depot*, for that part of their Produce which is destined for the West Indies or Foreign Markets—and for those supplies, which a dangerous or obstructed Navigation renders at one time uncertain, at another inadequate to their immense consumption. To these grounds for believing Halifax will soon hold the first Rank among the Colonial Free Ports, may be added those which the Canal *itself* will furnish. To make the subject more distinct we

will suppose—that the Waters of the Basin of Mines discharged themselves into this Harbour by a STREAM broad, deep, and navigable in its whole extent by Sea Vessels of the largest size used in the Coasting Trade :—and we would ask, what under *such* circumstances might not this Place become ? would it not be the Shipping Port of the Bay of Funday? would it not possess a continuous line of internal Navigation far beyond what any but Rivers of great magnitude afford ? and would not every part of the whole Country thus connected by it maintain, by means of its Channel, a constant uninterrupted communication with the Town ? and exult in the possession of a HIGHWAY so safe, direct and commodious ? Yet the *Canal*, when constructed of suitable dimensions, will be equally and perhaps more advantageous. Free from the inconvenience which the Current of a powerful River occasions, it will admit Schooners of large size to pass through, and thus, if necessary circumnavigate the Western Division of the Province : It will afford, to those owned on the Basin of Mines, a shorter passage in proceeding to or returning from the Fisheries, or foreign voyages, and permit them to bring to this Harbour, for exportation to the Mother Country, the *Timber, Spars, Deals, Staves and Lumber*, which are here always in the greatest request for the Ships employed in that Branch of Business—or the *Gypsum*, which although highly valued in the American States, has hitherto produced to its Carriers from the Bay no adequate return for their labour—or the *Coal*, which already discovered in many localities on the Shubenaccadie, and throughout the Settlements of Stewiack, Onslow, and Londonderry must soon become a very considerable Export under the operation of the Free Port System ;—or the numerous other articles of domestic produce which the Interior can furnish. In short, it will unite the Northern and Southern Division of Nova Scotia, by removing the Barrier which now separates them ; and make it the desire—because it will then become the interest—of their respective Inhabitants to unite in closer correspondence and more extended dealings. Without, therefore, enlarging further on the advantages expected from the Measure under discussion—considered with reference to the position, present Situation, and prospects of Halifax—what has already been suggested will justify the assertion that, after a very few years, the CANAL will render *all* that nature has done for this Port—all that the new and liberal policy puts within our reach—all that our Industry or Enterprise can accomplish—ininitely more valuable and important than, without it, they can possibly be ; and produce, in connexion with them, Results the most beneficial both to Individuals and the Public.

3rd. The Settlement and more extended Cultivation of the Interior.—These

objects cannot be more effectually promoted, than by providing good Roads or other means of Communication, through the different parts of the Country, to those Points where a demand exists for agricultural or other produce. Convinced of this the Colonial Legislature, at an early period, adopted the Road Service as the favorite subject of appropriation ; and such it will probably long continue with the popular Branch of the Assembly. The wisdom of that policy is now apparent not only in the extent and general excellence of the Highways throughout the Province—but also from the very rapid increase of its Inhabitants—and the general improvement of the Farming Counties. The large sums annually voted for roads and bridges, (to an extent which until very lately none of the other Colonies have imitated) operate as direct and effectual Bounties to the Agricultural interest ; and have materially conduced to its present state of advancement. Similar consequences, but in far greater proportion, will follow from opening the Canal. To all the Districts within the circle of its influence, it will afford *greater* facilities, than the best made Road, for the transportation of the heavier Produce ; and to all the Settlers near its Course it will *enlarge* the field of industry—by enabling them to convert into Merchandize *tany* Articles which are now an encumbrance. The Wood, which covers the immense Tracts of excellent Land at present lying in a state of Wilderness on the Bay and its Rivers—or which occupies the larger Portion of the Settlements in that quarter—is destroyed in the process of Clearing the Soil, because it is *now* not worth the price of conveyance to Market. And for the same reason they neglect their Lime and other Building Materials—all objects of great consumption in Halifax.

To introduce, then, the convenience afforded by Water Carriage will be—to promote, just as good Roads have done, the formation of new Settlements—to increase the Population—to enlarge the space and degree of cultivation—to raise the value of Landed Property and its produce—to create new objects for labor—and to open up to the Inhabitants, whether Farmers or otherwise every Channel in which their Industry can be profitably employed.

This Enquiry, as to the *Public* benefit from the Canal, might be pursued still further ; but it is presumed it already appears—that its Execution will confer great permanent and public benefit on the Agriculture, internal Trade and general Commerce of this Province ; that it will materially reduce the price of carriage—thereby allowing the supply of commodities on far better terms than at present ; that it will advance the wealth and strength of the Province by increasing the quantity of its Produce and Exports, and by employing a greater number of Vessels and Laborers ;—that it will preserve

the public Roads and reduce the Expense of their Repairs ;—that it will find employment, constant and immediate, for vast numbers of People ;—that the minerals so abundant in the Province will be worked ;—that the Revenue will be benefited ;—and lastly—that by opening so cheap and extensive a communication between the Interior and the Capital under its new privileges,—the necessaries of life will be kept at their fair prices, and free from the fluctuations they have sometimes undergone from the state of the Intercourse with the Country.

We pass to the other branch of Enquiry—the *Returns of Profit* to the Parties individually. Upon this point all—whose homes are fixed in the Province, or whom a long residence has identified with its Interests, or who hold real Estate at Halifax, or elsewhere within the influence of this navigation—will demand few stronger assurances of remuneration, than have been already given—by detailing the *Public* benefits to result from the work : since *these* cannot be secured without a corresponding advantage, during the process, to the Proprietors of the Canal. Besides to the Land Owner, if nothing were returned in the shape of Interest upon his advances, the increased value of his property, in consequence of the measure, would prove a Compensation sufficiently ample. But to Individuals without local Interests or warm attachment to the Colony, who are invited to associate in the Execution of the Plan, there can exist no other inducement to engage in it, than the *prospect* of receiving a fair *Interest* for their Investments. These Persons therefore, before they adventure, will ask something more definite than the *Public Results*, however certain, which have been already mentioned :—they will require particular information as to the nature, extent and value, of the expected *Canal Trade* :—and look to be as fully satisfied, on these points, as the nature of the subject permits. This it is presumed may be done, in some degree, by enumerating the Articles to be conveyed upon the Line of this Navigation. They consist of Timber, Spars, Logs, Deals, Lumber, Staves, Hoops, Shingles, and Wood for Building and Fuel—of Cattle, Hay, Flour and Meal, Grain, Potatoes, and other Agricultural Produce—of Bricks, Stone, Slates and Lime for Building—of Gypsum and Coal, and other Articles—from the Country :—and, from Halifax, of the various Commodities which will be sent, in return for the preceding, to an amount certainly equalling, but most probably far exceeding, their value. In this List there are some articles requiring particular notice.

It has been said—that in the Valley of the Shubenaccadie, Wood fit for Timber or other purposes, was extremely scarce and difficult to be pro

cured. This is a *gross mistake* : if the information of Experienced Land Surveyors, and other intelligent Men acquainted with the Country, (upon whose report the Description, given in the foregoing pages, was framed) can be at all depended upon. And, if the fact were otherwise as respects the River side, there still remains an almost inexhaustible supply on the North Shores of the Basin of Mines, and in the other places before mentioned. But it is in truth beyond a doubt that an immense abundance of Wood, for the various objects above named, exists near the Canal Line ; and will, by its means, be brought to the Capital for many years to come, and in quantities commensurate with the Demand—affording to Parties engaged in the Timber Trade, the great saving and convenience of loading their Cargoes in *this* Port ; and enabling our Mechanics to include the Business of Ship Building among their regular pursuits. The progress of the large vessels, now constructing at Dartmouth, has proved that this important Branch of Industry may be followed here to great advantage ; the Wood and Timber it requires being procured at a low rate, and in unlimited quantity, from the Vicinity of the Harbour. In addition to the supply necessary for those two objects, there is another great cause of demand for Wood and Lumber—its yearly increasing consumption in the Town for Building and other purposes. We have also in the West Indies a market for *all* the Boards, Staves, Shingles, &c. which this Country can furnish. Thus whether for exportation or domestic use, and either in a rough or manufactured state, the Produce of our Forests will descend the Canal to Halifax ; to an *extent* far beyond the computations of men unacquainted with the Interior.

The dependance on *Agriculture*, for fully employing the Navigation, rests on considerations which fully justify it. The Experience of the last five years proves the great *advance* already made, by the Province, from a state of absolute dependance on other Countries for one of the first necessities of Life. Our *Soil* and *Climate* stand redeemed from the charge of being unfavorable to the growth of Grain. And the recent *Improvements* in Tillage,—the increased *Industry* of the People—and the *fertility* of the Alluvial Lands around the Bay—are annually producing such returns as leave, particularly in the older Settlements, a large disposable Produce. With such favorable prospects, the Agricultural Interest is now secure ; and, in the natural progress of events, will keep pace with the rapid increase of the Population and growth of the Interior. It cannot retrograde. Even now, under the present expensive mode of conveyance, *Grain*, *Flour*, and *Meal* come hither during the Winter, and are bought up with avidity :—*Hay*, of

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which the consumption in this Town is very great, is supplied principally from Places within 45 or 50 miles; rarely from a greater distance—the expense of Carriage prohibiting our receiving it from Cornwallis, Cumberland, or the North Shores of the Bay—where it is cheapest and most abundant. *Potatoes* and other *Vegetables* are under the same exclusion. As the Freight of all these by the Canal would be barely one twentieth of the Land Carriage for 50 miles, the former would be constantly preferred for their conveyance. It may also be expected that, in this way, some portion of the large number of *Cattle, Sheep, &c.* required for the Market of Halifax, and its Naval and Military Establishments, will be conveyed from the Shores of the Bay—thus avoiding the fatigue and injury arising from the Land Journey. Should this be the case, another source of Profit will be opened to the Proprietors of the Navigation.

Coal and *Lime* have, in many cases, been considered of themselves sufficiently important to sanction undertakings far more expensive than this—and on every *Line*, where they can be worked, they are esteemed its principal support. Here we add to these *Gypsum* and *Building Materials*: and as each of them abounds throughout the Interior, the foundation of a Canal Trade of immense extent and value is secured. The Coal of Cumberland has been often used; that of Parrsboro'—Londonderry and Onslow but slightly examined: It appears excellent. Its Localities on the Stewiacke and Shubenaccadie are recent discoveries: but they are so frequent there, and through the rest of the District of Colchester, that it may be considered a continued Coal-Field. The supply of this article to Halifax is of the first consequence; and any measure, tending to reduce its price, must greatly interest the Inhabitants. It is believed that, from the source now referred to, Coal of the best quality can be brought, by means of the Canal, in quantity sufficient for any demand, and at half its present cost. If this be so—and appearances warrant the expectation—the conveyance of *Fuel* alone will support the Communication. *Gypsum*, as has been before stated, composes the Banks of the River. It can therefore be easily transported to the Harbour; and, being in request in the United States, will not fail to enter largely into the Exports to that Country. *Bricks* and *Building materials* are most extensive objects of water conveyance—For making the first both Clay and Sand, of the best kinds, are found on the Shores of the Basin and near the mouth of the Shubenaccadie, where their manufacture will employ many Laborers. The *Lime, Slate* and *Freestone* are easy of access; and the whole may be prepared, and disposed of here, at prices far below what they have hitherto borne; thus reducing the present expense of Buildings

and leading to the rapid enlargement and improved appearance of the Town; to which the heavy cost of those articles, or the difficulty of obtaining them have hitherto proved most serious obstacles.

Here, further enumeration of the Articles to be brought *towards* Halifax becomes unnecessary. It has been shewn that the great Staples furnished by the Forest, by Agriculture, by the Mines and Quarries, and by manufacturing Industry in its ruder Branches, will all contribute extensively to the *descending* Trade; and do, in fact, at this moment, depend upon opening the Canal for their *Prosperity*: it might be said—Agriculture excepted—for their *existence*. We therefore venture to assert—without speculating on the *amount* which each will give, but taking the *whole collectively*—that the value of Property brought down the Canal will be *immense*. The whole Results of the productive labour of the Population, within its influence, we attempt not to estimate. It is beyond computation: and, however limited be the transactions of each Individual, their sum total would present a most imposing appearance. But, to the value, whatever it be, which we assign to the commodities brought to Halifax, we have also to add the Returns sent *from* hence to an equal if not far greater amount. These form the Freight *upwards*. The *aggregate* of the whole, stated in figures, will reach to very many *thousands* of Pounds; and yearly receive large accessions from the *energy* of a rapidly advancing People, and the power of Cultivation.

Now—whatever be the Sum attached to *this aggregate*—it enables us to compute the probable yearly receipts from the Canal. This may be done by charging the Goods that pass through it—taking them on a general Scale—with a reasonable per centage upon their respective values for the Expense of their Carriage, therein including all the Freight, Tolls or Labor attending the Transit. Let it therefore be supposed that the Country supplies the Town with Commodities, to the annual value of £30,000; and that an equivalent to the same amount is returned:—the Estimate might stand thus—

For Lime, Coals, Gypsum, Hay, &c. to the extent of £10,000 cost of Conveyance from 30 to 50 per Cent—average 40 per Cent,	£4,000 0 0
For Timber, Lumber, Wood, &c. to the value of £10,000—20 per Cent,	2,000 0 0
For Grain, Flour, and other Agricultural Produce, to the value of £10,000—10 per Cent,	1,000 0 0
For Goods to the value of 30,000 sent from the Town, average Freight—5 per Cent,	1,500 0 0
Probable Annual Returns,	<hr/> £8,500 0 0 <hr/>

These Sums, it is manifest, are assumed merely for the sake of illustration; and without the thought that they denote the probable value of the Canal Trade, or the proportions the various Articles composing it may bear to each other—although perhaps the assigned expense of Conveyance may prove nearly correct. Nor would it be reasonable, after the Intercourse is fairly established, to estimate the first cost of the supplies from the Interior at a sum so low as £30,000—it being entirely disproportioned to the Demand in Halifax, and to the Ability and productive powers of the Country.

The Annual charge for maintaining the Canal may be thus stated—

Interest of 60,000 at 6 per Cent,	£3,600	0	0
Repairs and Expenses of Management,	2,000	0	0
Expense of two Steam Tow Boats, viz.			
Wages 15s. per day, or £4 per week, £234			
Fuel £3 7 6 for 200 days,	675		
Repairs, 5 per Cent on cost £2000	100		

£1,009 x 2 = 2,018 0 0

Total Expense, £7,618 0 0

These allowances are probably too large; but taken as they stand, and supposing the Receipts equal to £8,500, a Balance of Profit would remain amounting to £872 beyond the Interest.

To conclude this Discussion:—The benefits which the Proposed Communication offers to the *Public*, and to the *Individuals* who complete it, may be thus summed up:—To the *former* it presents advantages of the most enlarged, beneficial, and durable Character—certain in their attainment and indispensable to the Province. To the *latter* it affords every reasonable assurance that their advances will, in the beginning, return them the common Interest, and ultimately become a most profitable investment. The *Progress* which this Colony has made, in the short space of seventy-five years, since its first Settlement, and under the innumerable difficulties to which it has hitherto been subject—creates a confidence in our anticipations of its now more extensive and immediate advancement; and sanctions every Argument that has been thence adduced to prove the Importance of the Canal to *all*—and the *certainly* of eventual and most ample remuneration to the Proprietors. It is an Enterprise inseparably connected with, and wholly dependant on, the *common Prosperity*: and—unless *this* vanishes—neither the *Public*, nor those who engage in the Work, can possibly suffer disappointment.

It now only remains to notice the *Measures* necessary to be adopted for Opening the Navigation. These, if the example of our Mother Country—

or the unparalleled success, which has attended the efforts of our Neighbours in what is certainly the most useful Branch of National Expenditure, possess any influence—may be expected from the General Assembly. As a Public Work—as a Communication of the first magnitude and Usefulness,—it possesses the highest claims to their support. It peculiarly belongs to the STATE—not to Individuals. It ought therefore to be completed by the Funds—and be maintained for the general benefit of the Province.—Should even its cost impose additional burthens on the Inhabitants, none would be borne more cheerfully than a Tax—which while devoted to a service of Universal Interest—laid the sure foundation of future Revenue. The Legislature however, under the existing circumstances of the Province, may consider it inexpedient to assume the *whole* charge of the Undertaking. It can then only be executed by a JOINT STOCK COMPANY—upon the System so successfully adopted in Great Britain; where a greater extent of Artificial Water Conveyance has been completed, than any other Country, or perhaps all Europe together can boast—and to which much of her present Manufacturing pre-eminence may be traced. Should this course, be resorted to, the Act of 1824 has provided for a Charter of Incorporation, and bestowed the Authority and Privileges indispensable to their operations: so that here the common difficulties of constituting a Public Company will not be experienced. In addition to these facilities, the Statute offers the Associates an Exclusive Right to the River and Waters, for a Term sufficient to afford them a full recompense for their Expenditure. If the Company be formed under this Law, it would be proper to fix the amount of Capital at £75,000; to provide for the Purchase of any Land necessary for the Canal—for increasing its size, if larger dimensions appear expedient—and for other necessary works connected with it. It has also been suggested that the Shares should be as low as £25—in order that all classes may, if they think proper, participate in the Enterprise. The Stock would then consist of 3,000 Shares. After opening the Subscription *here*, the Friends of the Colony *elsewhere* may, with the fairest prospect of success, be invited to support it by the sanction of their names, and the Aid of their Capital: for as yet we cannot suppose that a measure, on which we are all inexperienced, will immediately attract—from better understood Pursuits—the large Sums required for its execution. That the Subscription *here* will be liberal, and demonstrative of the common anxiety in its favor, may not be doubted; because the Public are alive to its necessity, and conceive it already too long overlooked. But they also deem it a measure appropriate to the Legislature; and await their decision

and declared support of it, as Preliminaries to individual Contributions. To that Honorable Body therefore, in its approaching Session, the Eyes of all are anxiously directed; expecting—from deliberations whose end and purpose is the *common Good*—an acknowledgment of the *Public Character* of the proposed Navigation, and of its Right to participate in that munificence, with which the General Assembly has constantly supported the Communications of the Interior.

On the manner in which that encouragement may be best bestowed it is unnecessary to enlarge—It will doubtless be conferred in the way most conducive to the advancement of the Enterprise. Nor will it be forgotten that, when the Bill of 1798 was introduced and nearly passed, its Basis was—the Union of the Interests of the Associates with those of the Public. It provided for the Appointment of Commissioners, with authority to take shares, to a certain extent, on behalf of the Province; and to represent it in the Association: thus securing—to the Legislature, that Control which it ought to possess over all measures so closely interwoven as this with the daily Intercourse and affairs of the Community—and to the Treasury, an equal participation with private Subscribers in the ultimate Profits. Great and obvious advantages attend this method. If now adopted, the Enterprise, to the eyes of strangers, will stand invested with a Credit and Importance, denied to it as the Undertaking of Individuals unsupported by the Guardians of the Common Welfare: and the Company, within two years (the time required by the Engineer for completing the whole work) will be enabled to realise the general expectation of its advantages. None can question the ability of this Province to assume a *THIRD, OR MUCH LARGER* Portion, of the Stock of the Association; and to provide, without inconvenience to the public Service, the payments on the Shares held by the Commissioners. Let then *this* way of encouraging a great and most useful Undertaking be pursued. Let the Province become interested, to at least *that* extent, in the Enterprise. Let Commissioners be appointed as was proposed in 1798; and corresponding regulations be framed to guard the Interests of the Public. And there will then remain no further uncertainty in regard to the Canal:—the Company will be formed forthwith:—an expenditure of infinite importance to the laboring class will commence; and its Advocates, among whom are reckoned Gentlemen entitled by age—by long and practised knowledge—by thorough acquaintance with the Province—by lives devoted to its service—to possess some weight and influence in its affairs—will perceive themselves approaching the accomplishment of their favorite measure.

It must be mentioned as a peculiar advantage attending the Plan of this Canal, and as one which is seldom incident to similar undertakings—that, while its formation is in progress, and before the expenditure of its *whole* estimated Cost, £55,344, the Completion of any one of the *Sections*, (into which its line has been distributed,) will afford very great facilities for the conveyance of *Timber, Logs, Lumber* and other *heavy articles* to within a very short distance of Dartmouth. Thus, when the works of the *Fourth* section are finished, the expense of which stands at £10,903, the Navigation from the mouth of the Shubenaccadie to within 11200 yards (about 6½ miles) of this Harbour will be completed, of the full depth of Eight Feet throughout. The further sum of £10,634, required for the *third* Section, will extend the Passage to a distance of only 5800 yards (about 3¼ miles) from the Shore. And for the additional cost of £12,127 (at which the *second* Section, is estimated) the Communication will be complete into the Dartmouth Lake; leaving only the short space of 1300 yards intervening between its South Extremity and the Shore. The Parties therefore, who engage in the work, have it in their power to suspend their operations at any intermediate Point—if their funds do not authorise their commencing them, at the same moment, on each Section;—and the Roads now forming along the Sides of the Lakes from Dartmouth to Fletchers—and already in an advanced state—will afford the means of conveyance for a variety of Commodities, between Dartmouth and the Place where the Canal has its temporary termination. This Road shortens the distance between Fletchers and the Town, about 6½ miles. It is believed that upon opening the *Fourth* and *Third* Sections, the usefulness of the Canal will begin to be immediately realized.

Nor would the Legislature, by granting support—in this or any other way, by which the main result might be effectually advanced—trespass on those Rules which exact a due apportionment of the Revenue to the several Districts of the Government. With all the liberality that might be evinced for this measure—nay after a provision for executing it *entirely* at the public Cost—there would still remain ample means for answering the yearly claims of the Remoter Sections; until the completion of the Canal allowed them a larger participation in the outgoings of the Treasury. And were it otherwise, the principle, so fully acknowledged—that Representatives are for the *whole Province*, not the *Deputies* of a distinct Town or County—would bear upon every Argument, deduced from this *principle of Locality*, against giving the assistance now claimed from the Assembly. But to those, who view the matter in its proper light, it will be plain that neither Halifax, nor even the great Country around the Bay, are to benefit exclusively from the Canal; but

the Province at large—its Trade—its Commerce—its Industry—all that renders a Country Wealthy or Prosperous, or capable of producing a Revenue for the exigencies of any Service, whether local or general. From this Port, as from a Centre, this Navigation will diffuse the Influence of all these Agents to every part of the Province. Even now Halifax is continually receiving; in regular course, from Pictou, Lunenburg, Liverpool and other places on the Coast, the Cargoes of West Indian Produce which these Harbours do not require :—and the experience of the present Season has proved, that the Owners might, from hence, frequently avail themselves of the state of the Market in New Brunswick—were the Canal in operation—when the Voyage thither by Cape Sable could not be attempted. If therefore the Outport Merchants find it advantageous to sell at Halifax now, they will find it infinitely more so, when the open Passage through the Interior to the Bay, procures them a new and numerous Body of Customers. Thus it appears, that the Inhabitants, East and West of the Capital, have a direct and positive Interest in the Undertaking.

With some, the obstruction caused by the Ice in Winter, may appear a serious objection to it. But the same impediment closes the Erie Canal and others in the United States—some in Great Britain—and all the Water Communications in Holland, Denmark, Russia, Sweden and the North of Germany—but with this difference that *there* it continues much longer than *with us*. Yet, in all those Countries, it has not prevented the execution of Works, of this kind, the most expensive and magnificent. Nor will it here. In the severest seasons our Lakes are not closed above sixteen or eighteen weeks ; and the remainder of the Year suffices for all the beneficial purposes of the Intercourse. The objection is mentioned lest it might appear intentionally omitted.

These REMARKS on the SHUBENACCAIDIE NAVIGATION must now close. The attempt, however imperfect, to describe the Country—the past proceedings—and the advantages connected with it—will, it is hoped, render a subject of so much local interest, better understood :—lead to its closer investigation :—assist individuals in forming their Estimate of the prospect of Returns, either directly or indirectly, for their advances in aid of the Work :—and enable those, who are called to decide upon it as a *Public Undertaking*, to appreciate its influence and operation upon the *great Interests of the Province*. By the Legislature, and by intending Subscribers to the Association, it will be fully considered. But to every *Individual* Inhabitant of Halifax, it becomes a *duty* to represent—how intimately the opening this Canal will affect *himself* :—That whether as a Landholder, Merchant, Mechanic or Laborer—whether as a

Farmer or a Fisherman—whatever be his Trade—or however large or limited his occupation or Income—in every condition—he will derive from the Successful Execution of this great INLAND COMMUNICATION, sure, direct, and extensive benefit :—That he will then find the demand for Labor immensely increased—Employment for Mechanics constant and profitable—the Expense of Living reduced—the Fisheries direct encouraged—domestic Trade very greatly extended—the Commerce of the Port supplied with additional Exports—Lands raised to their fair value—and the prosperity of the Town resting upon the only sure and permanent basis—the unrestrained Operation of the Natural Energies and Resources of the Province :—In a word, as was pronounced by the Engineer,—HALIFAX, with the Canal, EVERY THING ; with-out it, NOTHING.

NOTE 1.—The following comparative Table of the Population of the Province is annexed, in proof of the Suggestion—that £30,000 per annum, in value, is a low Estimate of the probable amount of Commodities to be Supplied to the Capital, from the Interior, by means of the Canal. This Table is formed upon the Census taken in 1817—and from the Returns of the Militia Force for that Year and for 1825. The result of the Census was believed far below the actual Population. The true number of Inhabitants for 1825, will, it is thought, be nearly obtained by multiplying the Militia Returns by Five, for the undermentioned Counties :—

POPULATION FOR THE YEARS 1817 AND 1825.

	MILITIA FORCE.			POPULATION.		
	1817	1825	Incr'se.	1817	1825	Militia x 5
Annapolis East, .	1122	1298	176	4456	5941	6490
King's Cousty, .	1241	1548	307	7145	9526	7740
Hants,	1225	1497	272	6689	8918	7485
Colchester, . . .	927	1459	532	4952	6602	7295
Cumberland, . . .	576	923	347	3043	4057	7615
	5091	6725	1634	26285	35044	33625

Taking the average between 35,044, and 33,625 there remains for the Population 34,334 souls—which is probably below the real Number. For each of which it cannot be doubted, that Forty Shillings is too low a Sum to be fixed as the average of exportable Produce.

NOTE 2.—The annexed Table of the Dimensions of ordinary Schooners has been obtained from the Custom House Books : Whence it appears that—as the Locks of the Canal are now fixed at 90 feet in length for the Chamber, and 19½ feet in width—there is required only a small addition to their breadth to render them passable by the largest Schooners, half or two thirds loaded :—

Schooner 60 Tons, Length 56 Feet, Breadth, 16 feet, Hold 9 feet.					
" 70 "	58 "	17 "	8 "		
" 81 "	61 "	18 "	9 "		
" 90 "	64 "	19½ "	9½ "		
" 100 "	65 "	20 "	11 "		

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REPORT

RELATIVE TO A CANAL BETWEEN ST. PETER'S BAY AND THE BRAS D'OR LAKE, IN CAPE BRETON.

*To his Honor the President, administering the Government of Nova-
 Scotia, &c. &c.*

SIR,

In pursuance of Instructions from your Honor, to ascertain the practicability and probable Expense of constructing a Canal, between St. Peters Bay and the Bras d' Or Lake, I lost no time in making the requisite Examinations, Surveys, Soundings and Estimates ; and now beg leave to submit the following Documents :—viz.

A Map No. 1, shewing the relative Situation of these Waters, and the Direction of the proposed Canal.

No. 2. A Section or Profile of the Canal cutting ; with a diagram of deep cutting at Summit, adapted for Vessels drawing 12 feet of Water.

No. 3. Estimate of the Expense for executing the same.

Previous to adhering to the Line marked with red upon the Map, my attention was drawn to a course apparently favourable for connecting those Waters, *situated* between the points A. and B. marked with blue upon the Map.

By adopting this Line A. B. the entrance Lock in St, Peters Bay, must be strongly protected by Piers, and a Breakwater of Masonry ; this point being exposed to the action of the sea, during all gales from the South and South West. Here, the beach is composed of sand, and the Water shallow.

By the line marked with red, the Canal will terminate at both extremities in deep Water, the bottom clay, where good anchorage will be found under cover of the protecting Head C. The entrance Lock at St. Peters Bay will be effectually secured from all violent action of the sea. The soil and subsoil of this line, being of a clay loam, is well adapted for Canal excavation.

From the above considerations as to *situation*, independent of extra expense of a Breakwater, cutting through a sandy Beach, and grubbing of Timber, I have been induced to give a preference to the line drawn with Red.

The soundings in the Bras d' Or Lake from the Canal termination to its

outlet, vary from 4 to 10, 15 and 40 fathoms. The entrance to St. Peter's Bay is sufficiently deep for Vessels of the largest class. The leading channels are wide and easy of access.

Sir, I have the honor to be, &c.

(Signed)

FRANCIS HALL.

St. Peter's Bay, July 1, 1825.

—000—

Estimate of the Expense of Making the Proposed Canal from St. Peter's Bay to the Bras d' Or Lake.

DIMENSIONS OF CANAL.

Width at Surface,	52 feet.
at Bottom,	21
Depth from Top Bank,	13
Length,	2700 Lineal Feet.

Excavating 206,556 Cubic Yards, at 1s. 3d. per yard, £12,909	15	0
Retaining Walls, 1200 lineal yards, at 15s.	900	0 0
Regulating Lock, Stop Gates and Drawbridge,	2781	7 3

£15,591 2 3

Ten per Cent for Contingencies, Expenses of Management, &c.	1559	2 2
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Total Expense, £17,150 4 5

FRANCIS HALL.

1st July, 1825.

Report relative to a Canal intended to connect the Waters of the Gulph of St. Lawrence with the Bay of Fundy.

In compliance with Instructions from his Excellency Sir Howard Douglas, Bart. the Reporter proceeded to investigate a Line of Canal, from Cumberland Basin by the Petitcodiac River to Chediac Bay, upon the Gulph of St. Lawrence.

Secondly. A Line from Chediac Bay, by the Memramcook River, to Cumberland Basin.

Also a Line from Cumberland Basin, to the Bay Verte.

DESCRIPTION OF THE PETITCODIAC RIVER.

From the Anchorage ground opposite Fort Folly, the Petitcodiac River

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S HALL.

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of Fundy.

Howard Douglas,
from Cumberland
the Gulf of St.

River, to Cum-

Petitcodiac River

is navigable, at half tides, to its great bend at Babineaux marsh, distance 20 miles.

The principal intricacy attending this navigation occurs at Stony Creek, where upon the right bank of the River, a rocky ledge runs out to some extent; the opposite banks and bottom are composed of clay and soft mud; the bed of the Petitcodiac above Fort Folly, is abandoned by the tide at low water, thereby reducing the duration of transit to six hours each tide.

From the bend of the Petitcodiac at Babineaux marsh, the canal line proceeds nearly one mile through flat dyke land, ascending gradually about sixty feet through Woodland, to the head of Hults' Creek; from thence in a north east direction for seven miles, upon a high table summit, apparently from ninety to one hundred feet above the tide waters in Chignecto Bay,

Again descending regularly to the main branch of the Scoudic River, crossing this stream, and following the valley near its left bank, to Scoudic Bridge, where the tide waters of Shediak Bay, rise four feet during neap tides,

The present channel from the Bridge to anchorage ground in Shediak Bay, is extremely crooked, and irregular in depth; the distance from four feet water at neap tides to thirteen feet water, is one and a half mile. Total distance, &c. from anchorage ground in the Petitcodiac, to thirteen feet water in Shediak Bay is thirty six miles and a half,

The most serious objection to this route, appears to be the extent of Lockage; and a deficiency of water supply for the summit Level; as no streams of any consequence are to be met with upon this summit.

The Scoudic of itself, without very capacious reservoirs, would be found insufficient to provide for evaporation and absorption.

The Petitcodiac line having presented nothing of a very favourable nature for a Canal communication, my attention was led to explore the proposed route by the Memramcook River.

DESCRIPTION OF THE MEMRAMCOOK ROUTE.

This Line will commence at Shediak Bridge, where the channel of the Scoudic River will require to be deepened, and the width encreased; pursuing the bed of this River for two miles, to a ravine near Underwoods House, apparently the only practicable point to diverge from the River; pursuing the Line as surveyed by Mr. Minette, to the summit of an undulating table land, elevated ninety feet above the water in Chignecto Bay. Continuing by nearly a straight Southerly course, for four miles to the Banks

of the Scoudic River, where an extensive Embankment will be required, at least twelve feet in height, and nearly two miles in length.

From this river proceed by a south west direction across several high ridges, and by deep cutting for nearly three miles, to the main branch of the Memramcook River, which must be passed by a large aqueduct. The banks of this River are so precipitous for five miles, as to render the formation of a Canal very expensive.

The course will then pass near Richibucto Bridge, continuing nearly parallel with the Memramcook, and joining the same at Charters Bridge ; following the convolutions of the River to anchorage ground at Fort Folly. Total distance twenty nine miles and a half.

The heights and difficulty of providing [adequate water supplies, for this Line of Canal, being so similar to that of the Petitcodiac, the Reporter considered it unnecessary to bestow more time with either the above routes, until a Line by the Bay Verte was explored.

DESCRIPTION OF THE PROPOSED ROUTE BETWEEN CUMBERLAND BASIN AND THE BAY VERTE,

After a careful Examination of the various summits and outlets, between the Bay of Fundy and the Bay Verte, the Reporter proceeded to Survey that Line which presented the fewest difficulties ; commencing at Au Lac River, nearly three miles and an half above its junction with the Tantamar, where in ordinary Tides a depth of twenty five feet Water will be obtained.

The spot chosen for diverging from the River, is favourably situated for Entrance Locks and Basins ; the Soil is composed of a strong Alluvial Clay ; the Subsoil of a lighter nature, but sufficiently retentive to warrant Excavation, and Embanking with common Slopes.

From the Entrance Lock and Basin, the Canal Line will proceed in nearly a direct course upon the left Bank of Au Lac River, marked with a single black line upon Mr. Minett's Map, passing several Farms and accommodation Roads of level ground, to Lock No. 2, or Summit Level ; continuing upon this Summit and adhering to hard ground upon the south side of Brownal's Marsh, then through Woodland by moderate cutting to the Bay Verte and Fort Cumberland Road ; pass the same by a Drawbridge, proceed by a curved line across the dividing ridge, between the vallies of Au Lac and Missiguash.

Continue upon the highest part of the Missiguash Marsh, bearing upon several projecting points of hard land, a little north of Mr. Minnett's Line ; from thence proceed by moderate cutting to Lock No. 3, then with several

cuttings and embankments by Lock No. 4, to the junction with the Tide Waters in the Tignish River, at Lock No. 5.

The average rise of Tide at this Point of the Tignish is six feet, and two feet medium depth of still water.

The River course to the Bay Verte is very circuitous, distance to Roach's ferry is nearly four miles. At the ferry a good position for a Tide Lock and Waste Wear may be found, by which the waters of the Tignish will remain at a fixed level.

From this Tide Lock to Anchorage ground in the Bay Verte, the Channel of the Tignish is sufficiently wide and deep at low water to admit Vessels of one Hundred Tons burthen.

The extent of Artificial Navigation between Au Lac River and the Tignish is eleven miles and two hundred and forty one yards.

The total distance from Anchorage at low water in the Tantamar, to Anchorage in the Bay Verte is nineteen miles and a half.

The difference of level between the highest observable tide in Cumberland Basin, is twenty one feet, eight inches and nine tenths, above corresponding Tides in the Bay Verte.

Medium Spring Tides in Cumberland Basin, are sixteen feet, nine inches, and three tenths above those in the Bay Verte.

Medium Neap Tides in Cumberland Basin, are four feet, nine inches and three tenths above those in the Bay Verte.

BAY VERTE CANAL.

Expense of making a Canal between the Bay of Fundy and the Bay Verte, with eight feet depth of Water and according with the Specifications No. 7, including ten perCent for Contingencies, is £67,728 14 10

Expense of making a Canal between the Bay of Fundy and the Bay Verte, containing four and an half feet of Water, with corresponding Slopes and commensurate Locks, is 45,152 10 4

All the work may be finished in three Years from the date of the Contract, by adhering to either of the above proportions.

Several improvements may hereafter be effected upon the Line Estimated ; such as the formation of a Towing Path, from the Canal entrance to the mouth of the Tantamar. Also an extra Entrance Lock as represented on No. 5 drawing.

Upon the Bay Verte side, the Summit Line may be continued to near

Roach's Ferry ; but as these extensions would in the first instance materially affect the expense, they may be delayed until such time as the Canal transit will warrant their adoption.

By an examination of the Section it will appear, that nothing of an unfavorable or impracticable nature presents itself upon any part of this Route.

That the great general objection to the admission of Tide Waters of different magnitudes into an artificial Canal, will be obviated by a substitution of fresh Water as the correcting medium.

Water Supplies may be obtained from the valley of the Missiguash, where excellent situations for capacious Reservoirs are to be found.

The constructing of a Head eighteen feet in height, and an hundred and fifty yards in length, immediately above the Portage Bridge, will flood an extent of one hundred and fifty acres.

This supply alone, without taking into consideration the natural drainage of this stream, will furnish fifty nine millions eight hundred and six thousand cubic feet of water ; suppose that this reservoir will be filled by flood water only twice in one season, we have one hundred and nineteen millions six hundred and twelve thousand cubic feet of disposable water.

Now with a fair trade we may allow upon the Canal a transit of ten vessels ascending, and the same number descending for one hundred and fifty days ; each vessel to require sixteen thousand cubic feet of water. We have therefore forty eight millions cubic feet of Waste Water by Lockage, leaving seventy one Millions of cubic feet for evaporation and absorption.

From testimony of respectable and experienced Ship owners, it appears, that the entrance to the Canal on the Bay Verte side is safe and attended with no difficulty. That the Cumberland Basin side is peculiarly adapted for shelter and accomodation is shewn upon No. 5 Map.

On the whole, this Proposed Canal presents so many advantages and facilities of transit, when compared with the probable expense ; that it is only necessary in demonstration, to examine a Map of the Country, to be convinced of the great and general importance of the measure.

FRANCIS HALL, Engineer.

Queenston, October 22, 1825.

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